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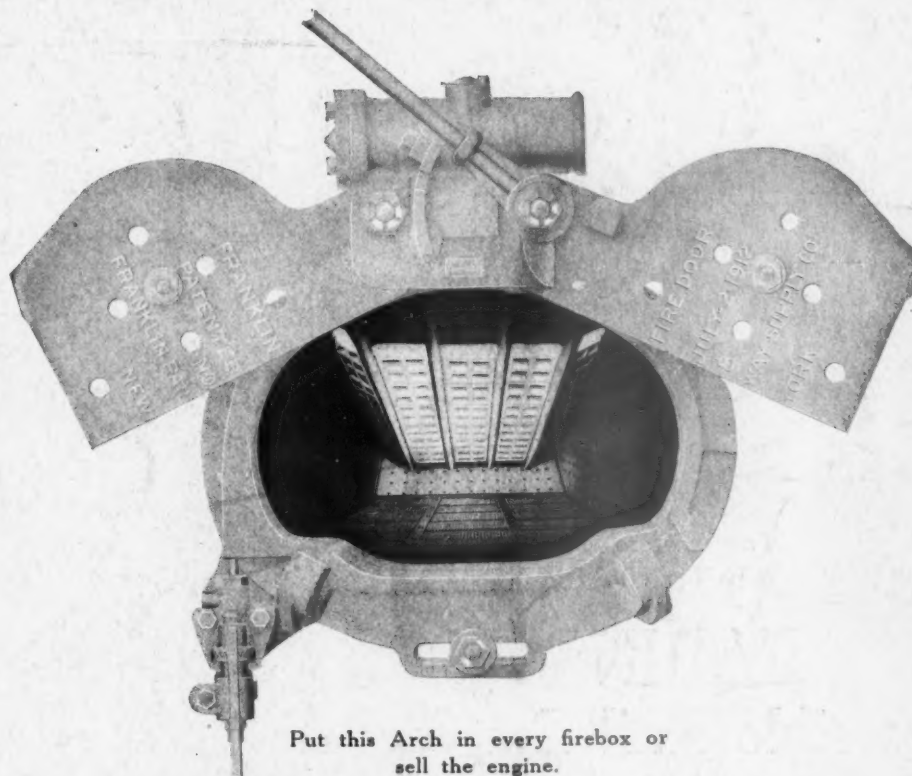
Railway Age

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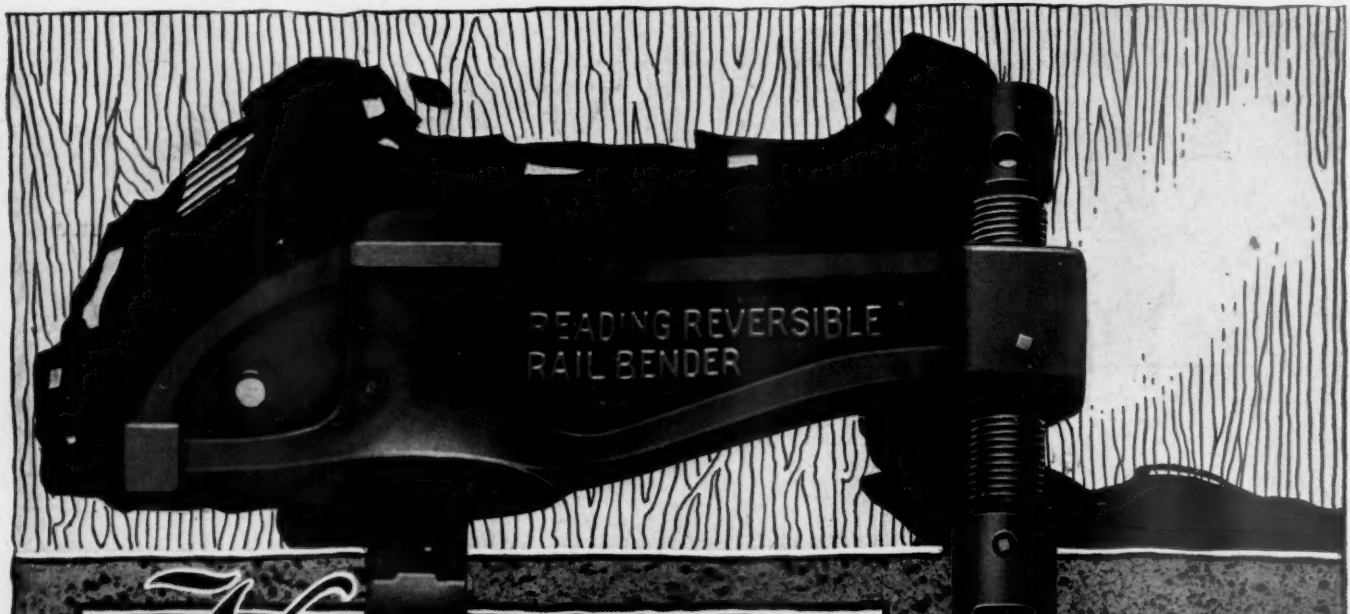
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EDITORIAL

Railway Age

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In many respects the Sao Paulo Railway, which is described in some detail by J. P. Risque in an article appearing elsewhere in this issue, is one of the most remarkable steam roads in the world.

The Sao Paulo Railway

Although only 134 miles in length, it represents the investment of a great amount of capital because of the exceptional nature of the physical barriers it has had to overcome. Its earnings, too, which are derived largely from the profitable coffee traffic, are very great. It is chiefly, however, the unique engineering problems which were encountered in the construction of this line and the equally unique manner in which they were solved that make the Sao Paulo a really remarkable railway. About 11 miles from the seaport of Santos there is a sharp ascent to a high plateau. This obstacle has been overcome by an elaborate system of inclines over which the cars are operated by means of cables. The Sao Paulo road, in common with a great many others in Brazil, is British throughout and does not, therefore, offer a very promising market for American railway supplies. There are, however, many opportunities elsewhere in that vast country for establishing a market for American equipment and these will be discussed in another article by Mr. Risque which will appear in the *Railway Age* at an early date.

There is agitation in some quarters for a reduction of freight rates, the argument being that if freight rates are reduced

Reduced Rates Not a Solution

shipping of commodities would thereby be encouraged. While it may be conceded that the present level of freight rates is made higher than would otherwise be advisable if it were not for the high wage scales of many classes of railway employees, we cannot but feel that the argument behind the present agitation for reduced rates rests upon an economic fallacy. It does not presume adequate realization of what constitutes a business depression. Prices of most commodities have fallen greatly during the past few months without bringing about buying on the part of the public on other than a bare hand to mouth basis. What justification is there then for the assumption of some that a reduction in rates would occasion heavier traffic to the railroads? It is the very nature of a depression that funds are not available for extensive buying and those who do have the funds are wary until they see signs of stability in business. Lower rates would, of course, decrease to some extent the cost of the commodities ordered when the present supplies are exhausted, and would be desirable if a large reduction of railway operating costs could be obtained. They would be of no assistance in helping the merchants to clear their shelves of present supplies. They would not, in other words, bring about an increase in buying and a revival of business. The problem now is to restore the earning power of the roads, which cannot be done without a reduction of operation costs and an increase of traffic. When that is done there will be a stabilizing of one of the greatest businesses in the country and an increasing confidence on the part of the public will follow. This increasing confidence would naturally tend to increase buying on the

part of the public and bring about eventually the revival of business for which the entire country is looking. A decrease in rates at this time could be expected to bring no such results.

The railroad news of the present month consists almost entirely of developments in the railroad wage question and the

The Stock Market

effect of the present wage scale on net earnings. The same observation applies also to the news that one reads in the financial columns of the daily press. The buyers of railway securities at the present time are following the reports of net earnings of the carriers as never before, and naturally the paucity of such net earnings has been reflected in decreased stock quotations and sharp declines in the market. The investing public, the speculators and the operators have quickly realized that one of the most important reasons for low net earnings has been the wages paid to railway employees. The announcements of the railroads requesting conferences with their employees and the fear of the delay that would occur in carrying matters to the Railroad Labor Board have thus been given their due importance and have accelerated the decline. The *Railway Age* does not often refer in its columns to the market quotations of railroad stocks, but when the attitude of the investor is so clearly shown as has been evidenced in this case it cannot properly omit reference to it. Conditions have been such as to point out that the business revival which all of us have been looking for this past several months depends more upon what the railroads and the Railroad Labor Board are going to do in this matter of wages than upon almost any other factor. There are many reasons why the matter should be settled in a short time, and the attitude of the buyers of railway securities is not the least of them.

An official bulletin of the French Commission in the United States gives some very interesting figures showing the extent

Progress of the French Railways

to which the French railways have been restored to normal since the signing of the armistice. It appears that of some 1,440 miles of double-track line destroyed during the war, all have been completely reconstructed. This work has involved not only the rebuilding of the tracks themselves, but of signal towers, stations and bridges also. Of the 1,665 miles of single-track line destroyed, 1,080 have been restored to service. Work on the remaining 585 miles is progressing more slowly, it is said, because they are being double-tracked. From the signing of the armistice until the end of 1920, 3,892 locomotives were placed in service, bringing the total up to 18,429. The amount of rolling stock and the efficiency of the shops can be said to have increased in like proportion during the period. In addition to the activities in reconstruction, the French railways are undertaking a vast program of electrification. The Midi company already has 90 miles of electrified line and the work of electrifying an additional 1,800 miles is in actual progress. In addition to this the Orleans and the Paris, Lyons & Mediterranean will

each electrify 1,800 miles of their lines. It is estimated that the saving in coal resulting from this electrification will more than pay the interest on the necessary loans. The reconstruction of the destroyed lines alone presented to the French railways a problem of staggering proportions. The way they have solved it and are now undertaking to carry out other plans, comparable in size and importance to the reconstruction of the destroyed lines, merits the admiration of everyone.

The statement was made at the March meeting of the Canadian Railway Club that open-top steel freight cars deteriorate so rapidly from corrosion in

Non-Corrosive Steel for Freight Cars

some sections of the country that they become candidates for the scrap heap after 10 or 12 years of service. J. J. Tatum, superintendent of the car department of the Baltimore & Ohio, advocated strongly that steps be taken to develop a steel for such use which will contain less impurities and be less liable to damage from moisture and acids. He referred to the iron box cars which were introduced on the Baltimore & Ohio in 1862. A few of the bodies of these cars are still in existence and show little if any damage from corrosion. An analysis of the iron shows a low percentage of impurities and a small amount of copper. The American Railway Association could well afford to make a thorough and painstaking study of the action in service of the steel plates and members of open-top steel cars, the insides of which it is impossible to protect with paint or other coatings because of the abrasive action in loading and unloading coal and other commodities. The whole problem is one of dollars and cents. If better steel is required it can undoubtedly be produced by the makers. If the increased cost of this better steel is so great as to more than offset the advantages of increased life of the cars and reduced maintenance expense, then it will be useless to follow the matter further. Mr. Tatum's suggestion should be looked into thoroughly. Meanwhile, it is important to keep ever in mind the statement which was made by Samuel Lynn, master car builder of the Pittsburgh & Lake Erie, at the conclusion of the paper on "Maintenance of Steel Freight Cars" which he read at the above mentioned meeting—if the railroad provides adequate facilities and a maintenance program "and an honest effort is made to maintain the cars in accordance with that program, the steel cars in the country will give the owners a better return for the money invested, in the way of better service and in increased life of the cars."

President Harding has made an excellent beginning toward commanding the respect of those interested in transportation

Two Good Appointments to the I. C. C.

by his first appointments of members of the Interstate Commerce Commission to fill two of the four vacancies. The importance of the commission was greatly increased by the passage of the Transportation Act and the many critical situations which have been and still are arising in the railroad world as incidents to the readjustment from the conditions resulting from the war and federal control demand ability of the highest type in its personnel. It is difficult to see how two better appointments could have been made than those of John J. Esch and Mark W. Potter. In addition to being a man whose personal character and integrity have won recognition, Mr. Esch has been a close student of transportation problems for many years and has probably been more closely identified with railroad legislation than any other single man. While those parts of the new law which have attracted the most attention had their origin in the Senate bill rather than that

adopted by the House under Mr. Esch's leadership, Mr. Esch, in co-operation with members of the Interstate Commerce Commission, had more to do with the bulk of the provisions in the act which rounded out the previously existing law. Mr. Potter, as a lawyer who has had some experience as a railroad executive, fulfils the demand which has been voiced for several years for a railroad man on the commission, and has already served for several months as a member of two of its divisions which have been intrusted with some of the most critical problems that have come before the commission. As a member of Division 5 Mr. Potter was closely identified with the commission's work in relation to car service last summer and fall and as a member of Division 4 he has been active in the work of administering the loan fund and in connection with the supervision of security issues.

It was like coming up out of a dark, damp, stuffy mine to the clear, bright air at the top of the shaft, with a stiff, refreshing breeze blowing. But it was not out-of-doors. It was in a large

A Refreshing Breeze

shop in which railway equipment was being repaired—quite evidently not a railroad shop where national agreements and McAdoo standardized wages hold full sway. The contrast from a previous visit to a railroad shop was as striking as the above simile. Men worked with a vim and as if playing a game. Exhausting themselves? No! Their good red blood was circulating freely and they seemed to get real enjoyment out of the game. After all work is no harder, and sometimes not nearly as exhausting as "soldiering" or loafing. The active, red-blooded man is the one who really enjoys living. After the closing whistle it was a delight to watch the faces of the men as they passed out of the shop gates. Slaves? No! Suffering? Not on your life! Happy? Most of them surely looked it! Exhausted after a strenuous day's work? Judging not, from appearances! What was the secret of this lively, red-blooded bunch? Each one of them had done a good, honest day's work. He was proud of it—and he was well paid on the basis of his individual output.

An encouraging sign of improvement of the desperate railroad situation was afforded this week by the publication of the

Freight Car Loading Shows Increase

weekly car loading report of the Car Service Division of the American Railway Association for the week ending March 5, showing a larger number of cars of revenue freight loaded than for any previous week this year and almost the first increase since the latter part of October. The total, 712,822, represents an increase of 54,000 cars as compared with the previous week, which, however, included a holiday, and an increase of 17,000 cars over the week before that. It is nearly 100,000 cars less than for the corresponding week of 1920, but it is larger than the figure for the corresponding week of 1919 for almost the first time this year. The car loading is now, however, only about 70 per cent of what it was during the fall. The peak week of 1920 was the third week in October, when 1,010,961 cars were loaded with revenue freight. Since then there has been a steady falling off of almost unprecedented proportions. An increase in traffic is, of course, to be expected at this time of the year but the recent depression has been so serious that the apparent turning of the tide is particularly welcome. The railroads, of course, need much more than an increase in traffic to put them in a healthy condition and their experience of last September and October when even the present high rates were insufficient to produce a fair return

with the heaviest volume of traffic ever known proves that a large reduction in the level of expenses, which the railroads are trying to accomplish by a reduction of the war-time scale of wages, is imperatively necessary.

The lading of approximately 1,700 cars is transferred monthly in the Chicago terminal district, at a cost of labor and material amounting to \$24,000.

A Penalty of Bad Car Conditions

This includes neither the cost of the extra switching involved nor of the inevitable crop of damage claims resulting from the transfers, which may be of even greater importance than the actual cost of the unloading and reloading. This is a fair sample of one of the penalties paid by the railroads of the United States at every point where traffic is transferred in any quantity, for the chronically run down condition of freight cars. Any improvement in these uneconomic conditions undoubtedly will cost money at the outset. In the case of motive power, there are probably few railroad officers who would be willing to maintain that the expenditure in inspection and maintenance necessary to eliminate every preventable engine failure was not justified by the saving thereby effected. But is this not essentially as true with respect to cars? A failure of car equipment while moving in trains results in much the same character of delays to traffic as those caused by engine failures. The cost of these delays constitutes a direct loss in itself and here, as well as in the transfer of loads, the direct loss may be less important than the loss and damage to commodities, the claims for which the road must pay and the adjustment of which is a constant source of friction between the roads and the shipping public. The establishment of billing prices for labor and material expended in interchange repairs high enough to afford an average profit of 10 or 15 per cent, at the outset undoubtedly would cause an increase in the total cost of car maintenance. But without the incentive of such prices there is little possibility of ever establishing a standard of car maintenance comparable with that generally pertaining with respect to locomotives. Such a standard of maintenance would go far toward saving the present losses in transfers and damages due to bad car conditions. Furthermore, if experience with locomotives may be considered as a criterion, a high standard of up-keep, once established, may be maintained with less expenditure than is constantly required in the struggle to keep bad conditions from getting worse.

Readers of the *Railway Age*, and particularly those readers interested in foreign trade, are familiar with the work that

The Department of Commerce

has been done during the past few years by the Bureau of Foreign and Domestic Commerce of the Department of Commerce. This paper has printed in abstract form and has discussed editorially the reports of Trade Commissioner Frank Rhea on markets for railway supplies in Australia, and in the Far East. The *Railway Age* also publishes monthly the instructive statistics compiled and issued by the Bureau's Division of Statistics. The new Secretary of Commerce, Herbert Hoover, has already announced in the few weeks, or rather days, that he has been in his new office, various ideas that he has in mind as to the improvement and enlargement of the work of the Department of Commerce. It is apparent that he does not desire to expand its work in a more or less haphazard way but that he desires rather to make its work such that it will be of most value to the business community. The administration of the Bureau of Foreign and Domestic Commerce in the recent past has been

of a high standard and there is little question but that it has kept up with the demands upon it due to our increased export trade. The consular information service in particular, while not perfect, is the envy of our competitors overseas. Nevertheless, there is room for some criticism in that the information supplied by the Bureau is sometimes not sufficiently practical to be of greatest service to the business man. Export trade at present is not what it was a year ago. The Bureau of Foreign Commerce, or whatever it may be called under the new order of things, has before it the task of rebuilding that trade to a more stable level. It is our opinion further that the Bureau should pay particular attention to exports of railway supplies. To do this it will have to give the business world information as to the advisability of investments in foreign railway securities, for it is well known that export business goes to that country that supplies the capital for improvements or new lines. The work to be done by the Bureau and by the Department of Commerce is of great importance. It is indeed fortunate that a man of Mr. Hoover's calibre and standing has been placed in charge of it.

In considering the possibility of obtaining more efficient and economical railroad shop operation, the important part played

Training Shop Mechanics

by foremen and gang leaders has been strongly emphasized in several recent editorials. It is true that a satisfactory shop output can never be obtained with inefficient, untrained foremen but careless, incompetent workmen have an almost equally serious effect and some means should be provided to train them and change their point of view. It is perhaps most natural to consider apprentice schools as the source of trained mechanics and too much cannot be said in favor of giving more time and attention to railroad shop apprentices. The possibilities in this direction are indicated by the fact that one important western road is now benefiting by the services of 1,506 graduates of its apprenticeship courses. The subject of apprenticeship is too big to be considered in a short discussion, but a few words may be said regarding the possibility of training unskilled or inexperienced shop men to qualify for positions requiring more skill. Why cannot the foreman, by instruction and encouragement, help these men to become better mechanics and, therefore, of more value to themselves and to the railroads? The reason is that a good foreman is not necessarily a good teacher. Experience has shown that hardly one foreman in twenty is qualified to perform the duties of instructor. The establishment of training departments in industrial plants has been accomplished at small expense and with most desirable results. In a particular case during the war 65 per cent of the employees of a certain plant were in the first draft but new, trained workers were obtained through the training department at such a rate that the production of the plant was actually increased and it was claimed that the quality of the work was improved. It seems probable that a system, or at least certain features of a system, which has given such good results in industrial plants could be advantageously incorporated in railroad shops. It would be a distinct step in advance if all ambitious shop men could come under the supervision of shop foremen or apprentice instructors who have shown particular ability as instructors. Promising helpers could be encouraged to qualify as mechanics and low rate mechanics could be helped to fit themselves for positions requiring more skill. The result would be that in the future when pressure is once more brought to bear on railroad shops to repair the maximum number of cars and locomotives and get them ready for service, there would be no lack of skilled help to bring shop output up to the required point.

Wanted—A New Baptism of Courage

ONE OF THE VERY GREATEST needs of the railroads today is more courage on the part of their higher officers. They especially need more courage in defending themselves. Within recent months they have been publicly and repeatedly charged with doing things which, if the charges were true, would justify the removal in disgrace of every one of them from his position.

The Plumb Plan League has circulated among railway employees all over the country literature implying that many high railway officers own stock in companies from which the roads make purchases, and get graft at the expense of their railroads by paying to these outside concerns excessive prices for the things the railroads buy. This persistent and insidious propaganda is undermining the confidence of hundreds of thousands of railway employees in the integrity of their superior officers.

The spokesmen of the labor unions before the Railroad Labor Board have secured publicity throughout the country for allegations that railway officers last year gave locomotive and car repair contracts at excessive prices to outside companies in which they were financially interested. These charges have been circulated and not adequately met with the facts until millions of people believe them.

A fine example of the kind of charges which are being made against railway officers appeared in the Chicago Herald and Examiner and other Hearst newspapers on March 12 under the signature of Arthur Brisbane. Mr. Brisbane said: "The recent government management amounted to this: It took over the railroads temporarily. Permanent public ownership was feared by the owners. The government stupidly left in charge the hired servants of the private owners. Those private servants were instructed to make government management an absolute failure, and they did all possible to make it a failure."

Government control was adopted as a war measure. It was the patriotic duty of every railway officer who accepted service in the Railroad Administration to do his best to promote efficiency of operation. Any railway officer who had done, what Brisbane in effect charges that all of them did, would have been a crook and a traitor. Who are these men that Brisbane and Hearst in effect charge are crooks and traitors? They include C. R. Gray, president of the Union Pacific, and W. T. Tyler, vice-president of the Northern Pacific, who served successively as directors of operation. They include Edward Chambers, vice-president of the Santa Fe, who was director of traffic, and A. H. Smith, president of the New York Central; Charles H. Markham, president of the Illinois Central; Hale Holden, president of the Burlington; N. D. Maher, president of the Norfolk & Western; B. F. Bush, president of the Northern Pacific; B. L. Winchell, formerly president of the Frisco; and R. H. Aishton, president of the American Railway Association, all of whom served as regional directors. They include every railway officer who served as a federal manager. Brisbane says, and is paid by Hearst for saying, in substance, that all these men were traitors to their country in its time of greatest need. Up to the present, however, we have not heard of a single one of the men thus accused having sued Brisbane and Hearst for libel, or having even publicly denied and refuted the charges made against them.

The men who ought to answer these charges are those against whom they are made. It is their personal honor which is attacked, and no man should rely on anybody else to defend his personal honor. If they do not promptly strike back at those who thus attack them the public in due course is sure to conclude either that the charges are true or that the men attacked are too cowardly to defend themselves. But the effect of allowing people like Brisbane to "get by" with such charges is not confined to the men attacked. It brings under

suspicion the entire management of the railroads, and the planting in the public mind of the suspicion that the railroads are being managed by men who were traitors to their country during the war, and who have been grafting at the expense of the railroads since, is bound to have the most harmful effects upon the railroads themselves.

Senator Cummins has announced that a Congressional investigation of the management of the railroads will be held soon after the special session of Congress begins. Railway officers do, and should, welcome this investigation. They should demand that it shall be so conducted that either the charges which have been made regarding the conduct of railway officers during and since government control shall be substantiated, or that those who have made them will be proven liars and slanderers. They should especially insist that Brisbane and Hearst be put on the witness stand to substantiate under oath and in detail the charge they have repeatedly published broadcast that the higher officers of the railways were traitors during the war. They should demand that every spokesman of the labor unions who has been making wholesale charges of incompetency and crookedness shall be compelled to appear and give under oath such evidence as he has to support his charges. Railway officers themselves should also demand the right to be heard fully in vindication of their entire conduct.

The *Railway Age* believes it knows enough about the conduct of railway officers within recent years, and the way the railways have been managed, to express the utmost confidence that when all the charges against railway officers which have been made have been fully ventilated practically all of them will be shown to be villainous fabrications. Meantime, however, every fresh charge which is made against them should be met promptly and publicly with flat denial and disapproval; and we suggest that it is about time the railways and their higher officers seriously considered whether it is not their duty to themselves and to the railroads to begin invoking in their defense the laws against slander and libel. At any rate, the officers should cease to take "lying down" such charges as are being made against them. Their personal honor, the rights of their security owners, and the public welfare demand that they shall individually and collectively meet squarely and vindicate themselves from these wholesale charges that they are traitors and crooks.

Railway Wages and the Cost of Living

IT IS EVIDENT that the question of what wages the railways shall be required to pay to all their employees in future will soon be before the Railroad Labor Board. Most railways already have arranged for conferences with their unskilled employees regarding reductions and some have asked for similar conferences with certain classes of their skilled employees.

The large advances in wages that have been made within recent years, and especially since 1917, have been based mainly upon the cost of living. The cost of living is also the most important factor which the Railroad Labor Board is required to consider in fixing reasonable wages. There is a general impression that for some years the cost of living increased more than the average wages of railway employees. There is also a general impression that the advances in wages finally caught up with and passed the increases in the cost of living, and that for some time the wages of railway employees have been relatively much higher than the cost of living.

Statistics regarding the average annual wage of the employees and the cost of living during the last six years show that these general impressions regarding the tendencies of wages in railway service and the cost of living are sub-

stantially correct. Studies of the cost of living have been made both by the Bureau of Labor Statistics of the United States Department of Labor and the National Industrial Conference Board. Those of the Bureau of Labor show the changes in the cost of living from 1913 to December, 1920. We have recalculated the Bureau's statistics to make them cover the period from 1914 to December, 1920, the last month for which they are available. Comparison of these statistics with the average annual wage per railway employee since 1914 gives the following percentages of increase in the average wage of railway labor and in the average cost of living in the United States:

INCREASE IN AVERAGE RAILWAY WAGES AND IN COST OF LIVING AS SHOWN BY BUREAU OF LABOR STATISTICS

Year	Average railway wage	Per cent increase in average wage over 1914	Per cent increase in cost of living over 1914
1914	\$816	.....	..... (Dec., 1914)
1915	831	1.83	2 (Dec., 1916)
1916	892	9.31	15 (Dec., 1917)
1917	1,004	23.04	38.2 (Dec., 1918)
1918	1,419	73.89	69.3 (Dec., 1919)
1919	1,483	81.74	93.5 (Dec., 1920)
1920 (before wage award)	1,806	121.32	113 (Dec., 1920)
1920 (after wage award)	1,910	134.07	94.5 (Dec., 1920)

It will be seen from the foregoing table that according to the Bureau of Labor statistics the increase in the cost of living outstripped the advances in the average railway wage until 1918, when average railway wages showed a total increase of 73.89 per cent and the cost of living 69.3 per cent. In 1919 the increase in the average wage had again fallen behind the increase in the cost of living, but in 1920 it again caught up with and passed it before the Railroad Labor Board's wage award was made last July. At the time that award was made the average railway wage was running 121 per cent more than in 1914, and the cost of living was only 113 per cent higher. The wage award made by the Railroad Labor Board caused the average annual wage of railway employees at the end of 1920 to be 134 per cent more than in 1914, while the cost of living, owing to declines in prices, had become only 94.5 per cent more.

The following table gives the percentages of increase in the average railway wage since 1915, and also the percentages of increase in the cost of living as estimated by the National Industrial Board:

INCREASE IN AVERAGE RAILWAY WAGES AND IN COST OF LIVING SHOWN BY THE NATIONAL INDUSTRIAL CONFERENCE BOARD

Year	Average railway wage	Per cent increase in average wage over 1915	Per cent increase in cost of living over 1915
1915	\$831	.....	.....
1916	892	7.3	8.7
1917	1,004	20.9	31.3
1918	1,419	52.2	71
1919	1,483	71	72.2
1920 (before wage award)	1,806	117.6	104.5
1920 (November)	1,910	130	93
1920 (December)	1,910	130	90
1921 (January)	1,910	130	81.2

It will be seen that the statistics of the National Industrial Conference Board indicate that the increases in the cost of living exceeded the increases in the average wage of railway labor until 1919. From that time on, according to its estimates, the average wage of railway labor exceeded relatively the cost of living, while in January, 1921, the average wage of railway labor was 130 per cent more than in 1915 and the average cost of living was only 81 per cent more.

This use of the increase in the average wage of railway labor as the measure of increases in wages during this period is more than fair to certain classes of employees, while it is less than fair to certain other classes of employees. For example, the increases in wages of certain employees in the shops, especially car inspectors and car repairers, have very greatly exceeded the increases in the cost of living, being as much as 200 per cent, while the advances of the wages of the employees in the train service never have equalled the increases in the cost of living. Furthermore, there have been very large increases in the number of employees in the shops,

while there have been no increases in the number of employees in train service. These facts show how unfairly the readjustments of wages have been made since government control was adopted, and seem to demand that any reductions in wages which are now to be made shall not be flat percentage reductions but shall be relatively much smaller for some classes of employees than for others.

But after all it is the increase in the average wage as well as in the number of employees that has caused the enormous increase in the railroad payroll, and since the statistics of both the Bureau of Labor and the National Industrial Conference Board show that compared with the cost of living the average wage is much higher now than it was in 1914 or than it was last July when the award fixing the present wages was made, it is plainly fair that consideration should be given at once to a general readjustment of railway wages.

It should not be overlooked in this connection that while the cost of living is now not over 80 per cent more than it was in 1915, and while the average railway wage is 130 per cent more, most of the employees who are receiving this higher average wage also have benefited by substantial reductions in their hours of work.

Getting Together

FREQUENT REFERENCE is made to the advantages which may accrue from co-operation between the manufacturers and the railroads in the study of many railway problems and without doubt much advance has been made in this direction in recent years. Failure to realize to the fullest extent the possibilities of joint work may be ascribed largely to the difference in the points of view of the railway man and the supply man. There are some officers in the employ of railways who view with suspicion or even actual distrust any statement made by a manufacturer's representative. However, the vast majority of railway officers take no such position. They are willing to be shown.

The principal difficulty, as stated above, is in the point of view. In the eyes of the salesman his product is supreme while to the engineer all things are comparative. As an illustration—some years ago a manufacturer of a structural material published an account of some laboratory tests, each one of which was concluded with some mishap to the testing apparatus which prevented ultimate failure of the material. In other words, there was a misguided effort to create the impression that the material was too strong to be broken and that it would be a tactical error to admit that there was a limit to its strength, but to the engineer this obvious effort to avoid a statement as to the true ultimate strength could instill only a feeling of suspicion. As another illustration in point, an engineering officer, who was required recently to study the problem of painting some bridges subject to a particular exposure, endeavored to obtain some information from certain paint manufacturers which would help him in selecting those materials most suitable for the conditions and which would also enable him to determine a most economical painting program with reference to the number of coats to be applied at one time and the intervals between paintings. Unfortunately a considerable portion of the replies dealt in generalities and superlatives of little value to him.

A purchaser should not expect the impossible. While he may realize that some materials are better than others he knows that in most cases these differences are relative. He should, in consequence, be willing to give a trial to any material that is represented to him in terms that bear the stamp of sincerity, and reasonableness and indicate a thorough knowledge of the product and of the conditions under which it must be used. To obtain the greatest good from co-operation, each party must appreciate the other's point of view and endeavor to meet it.

Letters to the Editor

Systematizing Work in Shops and Engine Houses

DECATUR, ILL.

TO THE EDITOR:

I have read with interest your article in the issue of January 7, entitled, "Railways and Labor in 1921." Co-operation is certainly the right thing, if it can be established, but that "IF" seems to be a big factor.

I believe railways will have to undergo a complete change in their methods of handling repairs to locomotives and cars at repair shops and roundhouses. Repair shops and roundhouses are working and handling work practically the same way they did when I started serving my apprenticeship, or the largest per cent of them are. Railways will have to manufacture instead of repair.

The greatest expense in a repair shop is caused by fitting with calipers by the "cut and try" method. Every part will have to have a new size, scrap size and intermediate sizes. For example, why should cylinders just be trued? They should be bored in $\frac{1}{8}$ -in. sizes or some standard size. Then piston heads and packing could be drawn from the store department. Why should a cross head pin-hole be just trued up? Why not ream it to the next standard size and draw a pin to fit? In this manner large pins could be reclaimed very handily. This could apply to the link motion and all through the engine in the same manner.

Much time has been saved on engines by having extra back ends for fireboxes. This would help the schedule—the same number of engines repaired each week and the same amount out every day. By doing this the weak department can easily be located and the necessary help be given.

Large roundhouses, to be more successful, will have to adopt repair shop methods of departments and gangs. The most important foreman would be the one that gets the engineer's report as soon as it is posted on the book. He will then schedule the engine in a certain department or gang, then each could be apportioned light as well as heavy jobs. Roundhouses should be made more convenient in regard to tool room and machine shop layout. These should be made so as to make the shortest possible routes for the work and workmen. There are plenty of good foremen that see these things but they have not the time or authority to remedy these matters. It should be the business of a special department. Did you ever stand in a large roundhouse or repair shop and see everyone going some place and wonder who is doing the work? I often wished I knew how much actual time was actually worked and how much lost calipering, to fit and try.

I have never seen a repair shop successfully worked unless the machine department was at least ten days ahead of the erecting department. This is done in a few well-balanced shops. If the plan to repair the engine out of the store department is adopted, the erecting department will always have material and the machine department will be ahead with the stock. What a great improvement could be made in the blacksmith shop by forging machines and plenty of good dies for them, also other labor-saving machines and tools!

I think the greatest showing in the many departments of a railroad can be made in the smithshop by machinery and good tools, but it seems this is left to the foreman, principally. In the number of blacksmith shops I have visited, I remember just two good ones, and the thought strikes me.

How much could be accomplished if these men were given assistance by standard manufacturing, good machines and tools!

Railroad companies do not buy enough new machines and tools. Machines never grow old to them, and if they build a new shop they do not always have new machinery. If they do get some new tools, the old ones are sent to another shop on the system for a high priced mechanic to run. Shop walls never repaired an engine or car. It is only a place to house machinery. It takes convenient layout and machinery. A job should never back track. Manufacturers figure the cost of doing a job by hand or by machinery. When a job is done, it is either by hand labor or machine labor. Instead of paying out labor, buy a machine with the saving of labor; when the machine is paid for the profit starts. I believe railroads will have to consider manufacturing, more and better machinery, tools and re-arrangement of shops, etc., so as to balance them. They will then make a big step towards reducing repair costs.

WM. F. CANAVAN.

The Increase in Freight Claims

CHICAGO.

TO THE EDITOR:

The Bureau of Railway Economics has prepared a statement of loss and damage payments which discloses the fact that the amount paid out for the years 1918 and 1919 increased 168.1 per cent over the four-year period from 1914 to 1917. Aside from the heavy burden which this unnecessary leakage imposes upon the carriers, a most serious phase of the freight loss and damage question is presented in the great economic loss sustained by the consuming public. The sum of \$106,000,000 paid out in freight claims during the year 1919, tremendous as it is, by no means represents the real value of the commodities destroyed. Claims are usually settled on an invoice price basis and represent largely the value of the raw products. Thus a claim payment of one dollar on grain lost or damaged means an actual loss of four dollars' worth of bread. But the drain on our economic resources occasioned by the loss of the commodities themselves is not the only waste. It is evident that the labor required to produce these goods is also a total loss. In the final analysis, the cost of producing a commodity is borne by the consumer whether the product serves its legitimate purpose, or is damaged or destroyed.

In considering the immensity of this burden on the carriers and the corresponding waste of the nation's goods, we are likely to overlook the direct hardship which freight losses impose on the shipper or receiver. A wholesale dry goods house might be considered a typical case. Such a concern depends largely for its patronage on its ability to serve its retail customers satisfactorily. One of the details that counts largely in this service is the promptness with which the house can place its merchandise in its customers' hands in good condition. If there are two or more wholesale houses competing for the business of one firm, and this is usually the case, and if one of these is located on a railroad which handles freight carelessly, it will soon lose the customer, for the latter will discover that he can obtain his goods with less delay and in better condition from the other house whose carrier is furnishing service which is continuously satisfactory.

The case of the small retailer who is the principal receiver of freight in the country towns, furnishes another illustration. He buys goods with the expectation of receiving them within a short time after the order is placed. As a general rule his orders are for small quantities. If a shipment is delayed or damaged in transit, he is very likely to run out of his stock in certain lines with the result that his customers

will go to some other store where they can purchase the commodity, and thus perhaps are lost to him permanently. Obviously no mere payment of his claim can make good any loss of his customers.

The duty of the carrier, therefore, does not rest merely with the prompt payment of claims. The railroad should make every reasonable effort to handle its freight so carefully at all times and under all conditions that it will reach the consignee in the same good condition in which it was delivered to the carrier.

F. E. WINBURN,

Special Representative, Freight Claim Prevention, American Railway Association.

Car Supply and Mine Production

WASHINGTON, D. C.

TO THE EDITOR:

A. G. Gutheim, manager, Public Relations Section, of the American Railway Association, called my attention some time ago to a passage on page 48 of the "Buy Now and Ship Now" issue of the *Railway Age* of January 7, 1921. The statement reads "Studies made in the bituminous coal mining industry show that when the car supply is 75 per cent of the normal requirements, the cost of production is 16 per cent greater than when all demands for cars are met. If the car supply is one-half normal, the cost of coal is increased 40 per cent."

This statement is apparently based upon a diagram shown at the bottom of page 34, and numbered Figure IV. That diagram drives home a very important fact in bituminous coal mining, namely, that any long interruption to normal operation greatly increases the cost per ton. As Mr. Gutheim points out (in a letter to the editor published in the issue of February 4, 1921, page 314), however, the diagram may be misunderstood.

In the first place, I am informed by R. V. Norris, engineer in the Fuel Administration, by whom the original diagram from which the one shown by the *Railway Age* was reproduced, was constructed, that the figures in the vertical scale entitled "Percentage increase in cost," should read 20 per cent, 40 per cent, 60 per cent, 80 per cent, 100 per cent, 120 per cent, and so on, and not .20 per cent, .40 per cent, .60 per cent, .80 per cent, 1.20 per cent, and so on, as they are printed.

In the second place, the increase in cost is due to the fact of interruptions to regular operation, not to the particular cause of the interruptions. In other words, any cause preventing operation, such as a strike, mine disability, or lack of market, would tend to increase costs in the same ratio as the failure of the car supply. Furthermore, there is so much loose talk about "car shortage" that the diagram can be used as an indicator of increased costs only when the figure of car shortage is an accurate measure of the loss of mine-working time caused by lack of cars. It is my understanding that the committee of engineers that made the study on which the diagram is based was careful to consider the actual running time of the mine rather than any theoretical figure of car shortage based on the established rating and the cars placed; and furthermore, that the committee figured the decrease in car supply not from a full-time supply but from the normal, ordinarily enjoyed at these properties. That being so, the diagram ought to indicate the increase in costs accompanying each increase in working time below the normal. As Mr. Gutheim very justly points out, however, it may give an erroneous and exaggerated idea of the increased costs if the "car shortage" is calculated on a rating inflated far above the capacity of the mine to actually load coal.

F. G. TRYON,

In charge of Coal and Coke Statistics, United States Geological Survey, Department of the Interior.

Automatic Signals and Train Operation

CHICAGO.

TO THE EDITOR:

I have read carefully and with much pleasure your very interesting number of January 7, and would like to call your attention to the article on page 39, "What Additions to Physical Property Are Necessary?" Under various captions you specify certain types of improvements and end up with "Other Classes of Improvements." Under no head do you make any mention of automatic block signals.

I do not believe that there is any improvement which railroads can make today which will give as large and direct a return for the money in the speeding up of train movements as automatic block signals. I know of one subdivision of less than 120 mi. where automatic block signals were installed where a careful record was kept by the chief dispatcher for a year which showed that the average freight train movement after the automatic block signals were installed was more than an hour less per trip than it had been before. If this increase of efficiency does not represent a large economy I give up.

The whole trouble with the automatic block signal problem today is that the vast majority of the higher officers on railroads are men who learned railroading before the day of automatic block signals, and entirely too many of them still look on the installation of these devices as an expensive luxury, and not a necessity. They look principally on the safety feature of the signals and not on their increased efficiency and are loath to spend high-priced money for what they consider an unnecessary refinement.

Anyone who will ride on a passenger train over a railroad equipped with single track A. P. B. automatics and will give his attention to watching the actions of the crews on trains which have taken sidings to let the train he is on pass, will see the value of signaling. In almost every case, as he passes a freight train, he will see the head brakeman start towards the main track switch as soon as the rear of his train passes, knowing that in a minute or two the starting signal will clear up so that his train may pull out. In the old days, under manual block or with time limit rules, a train crew knew they had 10 or 15 min. to wait before the block would be clear, and that then it would be necessary to spend some time calling up the block operator on the phone; consequently nobody was in a hurry. The action of the men now is snappy where it used to be decidedly lazy.

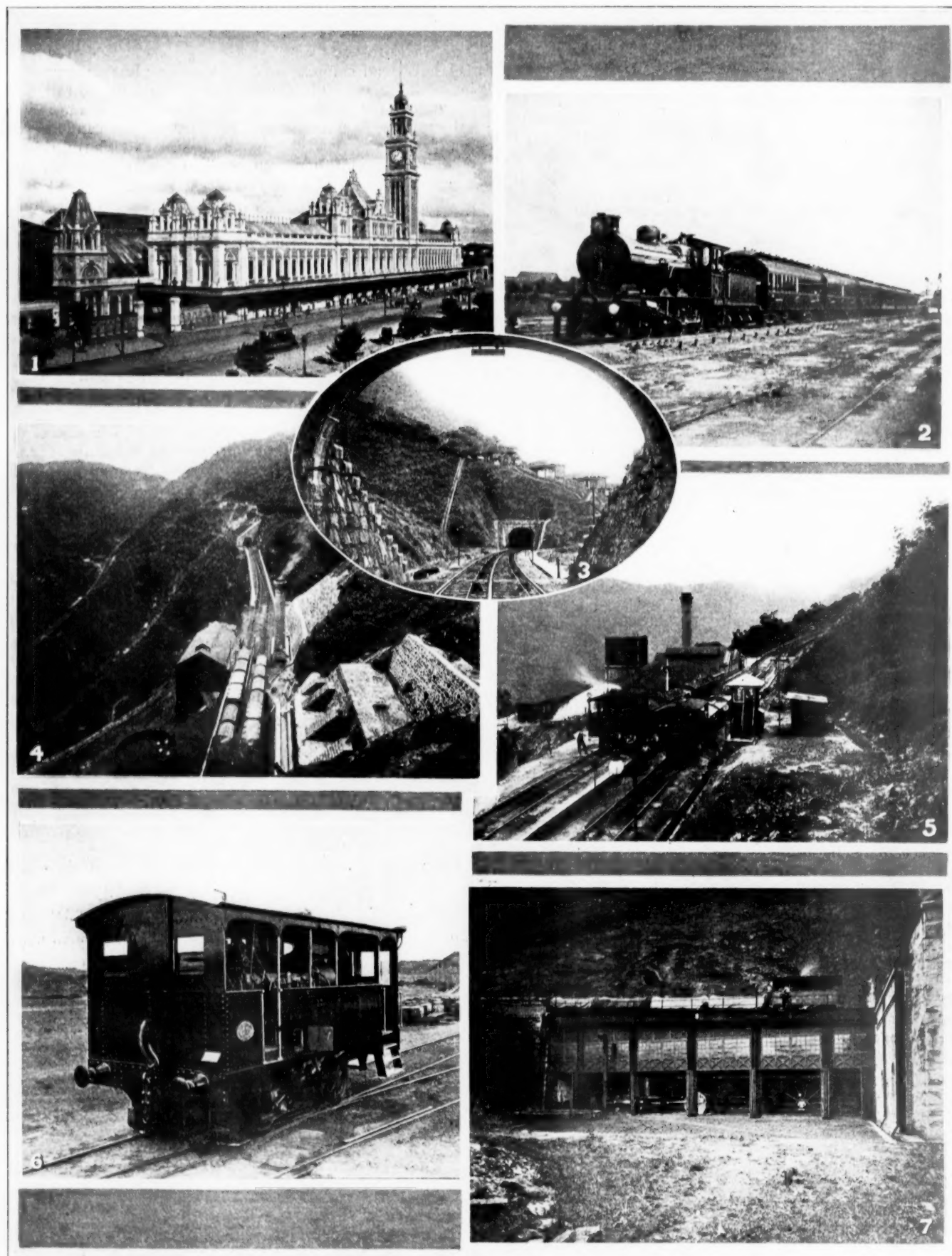
I have many times heard the engineman of a train waiting on a siding for a meet, sound his whistle as soon as the starting signal went to the stop position (indicating that the train he was to meet had passed the limits of the next station ahead), so as to call in the brakemen, who may have been over in a cornfield chasing a rabbit, and the conductor who was taking a nap in the shade of a tree. In the old days, when there was no way for the trainmen to get advance information of the approach of the train they were to meet, this assembly would not be sounded until the opposing train had actually passed the siding and a considerable time would elapse before the train on the siding would get in motion; now, however, the train is ready to move as soon as the block ahead is clear.

The automatic block signal ought to be advertised much more than it is from the standpoint of efficiency. It is a big money saver as an operating proposition, aside from its use in preventing collisions.

JAMES B. LATIMER,

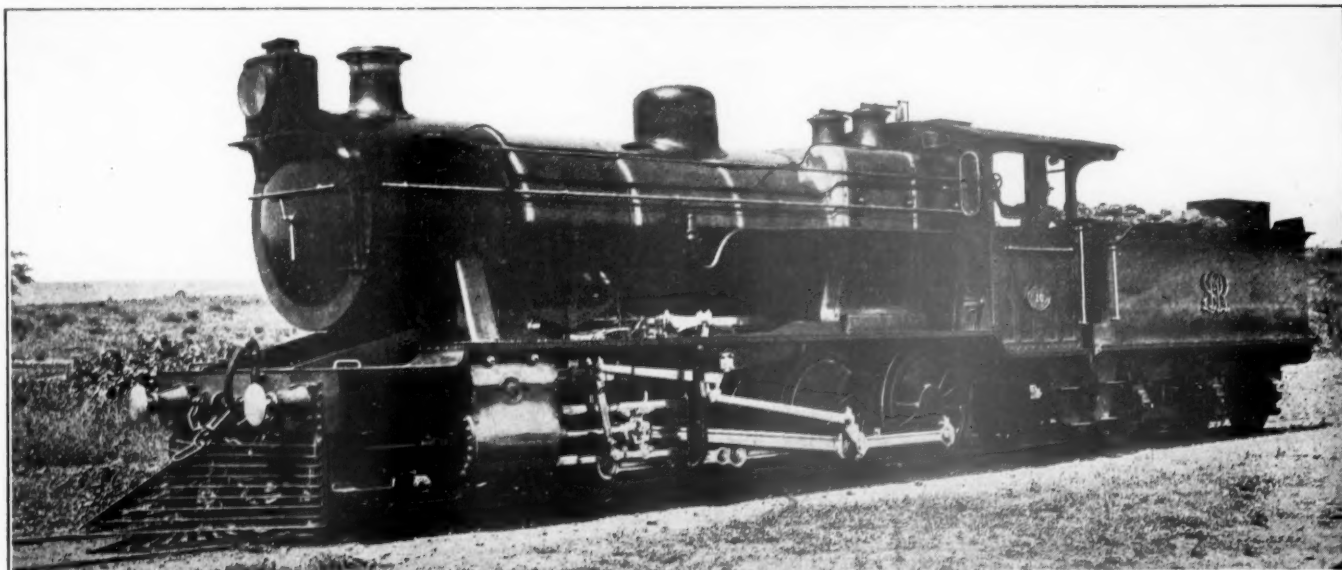
Signal Engineer, Chicago, Burlington & Quincy.

THE UNITED STATES CIVIL SERVICE COMMISSION has announced open competitive examinations for accounting and statistical clerks to fill vacancies in the Interstate Commerce Commission at \$1,500 to \$2,100 a year.



SCENES ON THE SAO PAULO RAILWAY

- 1.—Luz Station, Sao Paulo; 2.—Express Train from Alto da Serra to Sao Paulo; 3.—Tunnels on the Slope, Showing Three Rails and Cables; 4.—The Rugged Country of the Inclines; 5.—Trains on the Passing Tracks; 6.—A "Locomotive Brake"; 7.—A Power House on the Inclines.



Typical Consolidation in Freight Service Between Alto da Serra and Sao Paulo

Engineering Marks Sao Paulo as Novel Railway

Method of Overcoming Heavy Grades Unique—Virtual Monopoly of Coffee Traffic Gives Financial Strength

BRAZIL IS DIVIDED into 20 states, one territory and one federal district. This great country embraces 45 per cent of the area of the whole South American continent. The state of Sao Paulo lies to the west and south of Rio de Janeiro on the south coast of the country. The important seaport of the state is Santos and the city of Sao Paulo lies 50 miles inland from that place.

Lying mostly within this state but overlapping somewhat into the neighboring states of Rio de Janeiro, Minas Geraes and Espirito Santo is the irregular bottle shaped area which is said to supply 75 per cent of the world's coffee. The upturned bottom of this bottle can be said to lie somewhere around the northeastern boundary of the state of Sao Paulo; the mouth of the bottle is Santos, on the coast; the line of the Sao Paulo Railway from Jundiaby to Santos is the neck of the bottle through which this coffee flows from the hinterland traversed by the Paulista and other lines. Of the 1,400,000,000 coffee trees in the republic, 750,000,000, or 53½ per cent, are said to be within the borders of this state.

In 1915 the Sao Paulo Railway carried 13,444,756 sacks of coffee of 132 lb. each, or more than 887,000 tons, from the coffee district to the port of Santos, this amount representing the entire production of the state of Sao Paulo and large quantities from the neighboring states. The Brazilian coffee crop of 1916-1917 was estimated at 13,500,000 sacks; that of the rest of the world at only 4,500,000. In 1916 the United States purchased 692,736,924 lbs. of the Sao Paulo crop, representing a value of \$65,176,310. A further expenditure for coffee from other districts, amounting to \$8,176,005 in that same year, brought Uncle Sam's Brazilian coffee purchases to the sum of \$73,541,315.

The presentation of these instructive figures is made in order to show that the Sao Paulo Railway, an English owned line, with its 134 miles of track is an important factor in the coffee trade of Brazil and to explain some figures on the earnings of that line in comparison with those of less fortunately located roads. In 1918 the Sao Paulo Railway

earned a gross income per mile of track operated which was more than 13 times the average amount per mile earned by 14 other lines. The amount in cold figures reached \$54,640; the average of the 14 other lines was only \$3,800 per mile. The highest earnings per kilometer of any other Brazilian road was \$7,700, which was the average for the Paulista Railway, a tributary to the Sao Paulo road and an important contributor of coffee tonnage to it. The next highest road in earnings per mile was the Central of Brazil, also somewhat of a coffee carrier from the states of Minas Geraes, Espirito Santo and Rio de Janeiro. The average earnings of this road reached \$10,500 per mile.

From the foregoing it is scarcely remarkable that travelers are wont to tell exaggerated tales of the "wonderful" Sao Paulo Railway which is alleged to "have so much money that the surplus is spent in painting the scenery along the right of way!"

This 5 ft. 3 in. gage line was constructed in 1867 in spite of baffling engineering problems, one of which involved finding an economic method of hauling traffic over 10 per cent grades which were encountered a few miles inland from Santos. These 10 per cent grades extended a distance of six miles and the method of hauling traffic over them which was finally adopted was the construction of a cable system with four stations. Over this line trains were hauled from sea level at the foot of the ascent to an elevation of 2,600 feet with comparative satisfaction. This route was successfully used for about 28 years when it was decided to lay a new line. In 1895, therefore, the relocation of the entire line was commenced, and finished in 1901, the latter construction superseding the former entirely insofar as the hauling of traffic is concerned.

The new line lies considerably above the level of the old one and provides an easier grade—8 per cent instead of the former 10—but its construction necessitated the boring of a string of 13 tunnels varying from 171 ft. to 853 ft. in length, a total of 4,428 ft. for all the tunnels combined, as well as the construction of 16 viaducts, the longest of which

is 620 ft. From Santos, on the bay, the new line follows the route of the old to the foot of the mountain, or Serra as it is called, and comprises the first section of the line, all of which is practically level.

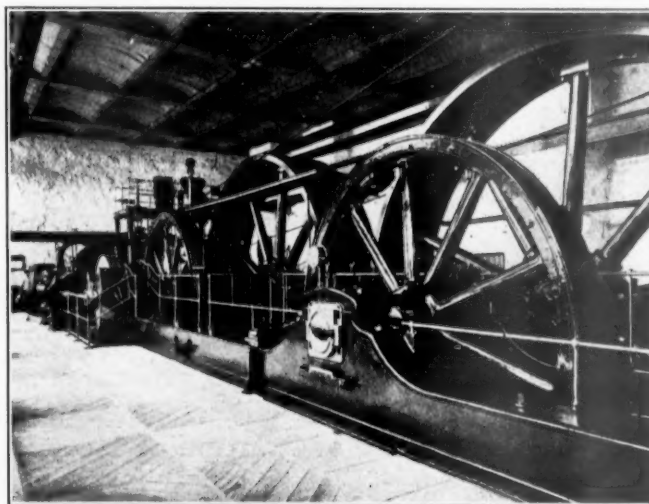
The second, or Serra, section commences here and the details of the construction and operation of this section covering an ascent of 2,600 ft. mark it as one of the most interesting climbs in South America. The slope, or the entire section, is laid off in five equal inclines, at the base of each of which is a graded level of sufficient length and width to accommodate an arrangement of passing tracks. Below each of these passing tracks, at a suitable location, is a power-house for each incline. The tracks on each incline, except at the passing points mentioned, have three rails, the middle one of which is used in common by both ascending and descending trains. At the passing tracks the center rail divides into two, thus forming the inside rails of two separate tracks. Each line has its individual cable system driven by a distinctly separate set of rope driving engines. Thus, although operated independently the whole system is run as a single unit.

Unity of operation is facilitated by telegraph and telephone communication between the operators' towers on each incline. Each power-house has four coal burning boilers of the English type known as "Lancashire." These boilers are equipped with mechanical stokers and feedwater heaters. The two hauling engines in each power-house are of 1,000 h. p. each and drive two sets of drums upon which are mounted the driving cables, the two drums being connected through separate grooved pulleys of large diameter with 16 coils of hemp rope. The driving cable, entering the engine-room from the ascending line, makes four turns around the rope drums or wheels and then passes over a fixed return wheel 14 ft. in diameter at the back of the power-house and from there out and over the descending line.

At the base of each incline there is a special mechanism called a tension slide, which arrangement is designed to keep the driving cable taut at all times. The driving cable is

approximately 78 tons. A train will ascend the entire division or section of five inclines in 40 minutes; with five of them running, this is equivalent to a movement of 585 tons an hour.

The special locomotive built for and assigned to work on this interesting hill is an 0-4-0 affair entirely enclosed in a steel housing and would remind old timers of the steam "dummies" that were put to work in the cities of this country before the electric cars were introduced. The Sao Paulo officers call them "locomotive brakes," probably on account of the fact that they are far more efficient "brakes" than they are locomotives, their only use in the latter capacity



Interior of Power House Showing Cable Drive

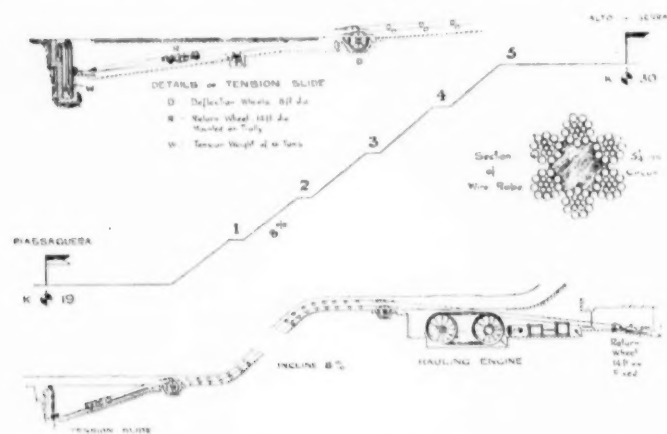


Diagram Showing Tension Slide, the Five Inclines, a Section of the Cable and Details for One Incline

made up of six strands of steel wire on a hempen core and is calculated to have a resistance to breaking of over 100 tons when new and of about 70 tons when worn. As the maximum working load on the rope from all sources is known to be not in excess of 18 tons, the factor of safety varies from 6 to 4. One train always ascends one incline while another descends the next higher incline and conversely. This makes for little delay at meeting points.

The maximum weight of each train, including the special locomotive built for this job, is 145 tons. Deducting the locomotive's weight of 31 tons and allowing an average weight for the cars it appears that the net paying load is

being in light switching around the yard or on the level spaces at the foot of the inclines. They are equipped with a special clutching mechanism for gripping the cable and two sets of specially designed, mechanically operated, rail gripping, jaws for seizing the rails on both sides in the event of a failure of the vacuum brakes with which all the trains are equipped.

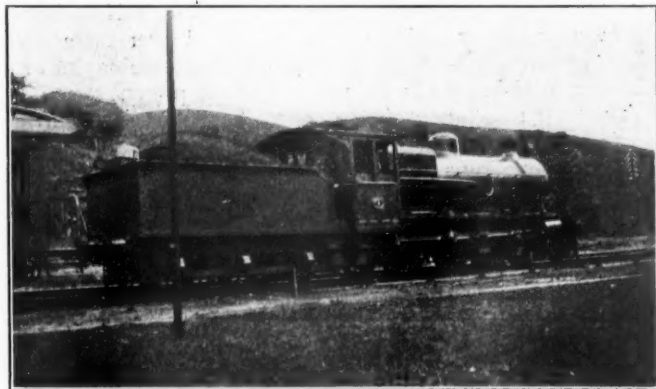
Extreme precaution is exercised in the operation of the inclines and aside from the fact that the car tips at one end, due to the steep grade, the passengers may feel perfectly at home. The "painting of the scenery," mentioned previously, is the only explanation the laymen has ever been able to make of the elaborate painted abutments that have been built along the right of way to forestall the extremely damaging effects of the slightest movement of earth which so frequently precipitates a slide of damaging consequences. The "painted scenery" which so highly amused the admirer of this perfectly equipped little road was the coating of tar which had been applied to the white faces of the solid concrete retaining walls in order to show up plainly a sudden crack. Thus has the road's engineering department been accused of extravagance when in reality the artistic setting which the passenger thought was prepared for his special edification was an evidence of engineering thought of the highest order! The trick has served its purpose well and has helped the line's inspectors to locate trouble in time to prevent a catastrophe. As the general manager of this railway seemed to be quite disturbed over his road's reputation because of the "painting" story, he asked that the truth be told; it is hoped that the facts as herein set forth are sufficiently clear and that the true explanation thus told will aid in the dissemination of correct information.

From the summit of the slope, called Alto da Serra ("top of the hill"), the line runs in a northwesterly direction to Sao Paulo which is 50 miles from the coast terminal at Santos. Here the railway intersects with the government

owned Central Railway of Brazil, which runs northeast in the direction of Rio de Janeiro, and the Sorocabana Railway, which is a meter and 5 ft. 6 in. gage line of 864 miles in length and which runs to the southwest. The Sao Paulo Railway uses the terminal in Sao Paulo known as Luz station. The through tracks at this terminal are below the level of the street, and four foot bridges are being used on the level with the station floor to convey passengers across these tracks to up and down trains respectively.

Sao Paulo is a typical town of modern Brazil. It covers about 14 square miles and its population is approximately half a million. Its manufacturing output is said to reach a value of \$20,000,000 annually and is made up of cotton, wool and jute goods, shoes, hats, beer, pharmaceutical goods and perfumery, matches and a number of other commodities. On the other hand, Sao Paulo is said to have imported more automobiles to date than any other city in Brazil. Remarks on the steamers from Buenos Ayres would seem to indicate that Sao Paulo is the business town of the republic and is fast outstripping in many ways the more attractive Rio de Janeiro. The same remarks likewise draw attention to the rumor that when a Brazilian has accumulated enough money in Sao Paulo he goes to "Rio" to spend it—which is in itself an advertisement for both cities.

Hurried railroaders—and others—should find time while in Sao Paulo to visit the "Instituto Serumtherapico," which



A British 4-6-0 at Alto da Serra

in plain unvarnished English means Snake Bite Farm. Here, in order to vary the monotony of rails, stations, engines and cars, he can look upon a collection of live snakes the like of which he never saw before and most likely will never have a chance to see again. This institution contributes its bit to the welfare of the prospector and railroad builder in the country in providing antitoxins for protection against the bites of the venomous snakes which infest the Brazilian jungles. The institution was founded by an eminent Brazilian physician, Dr. Vital Brazil, who originated the idea of preparing serums in that manner.

The Sao Paulo Railway continues on to Jundiahy, 84 miles northwest of Sao Paulo, where it meets the southern end of the Paulista Railway. A section of this line between Jundiahy and Campinas is now being electrified. The electrified division will be 28 miles long and double tracked. Power at 88,000 volts, 60 cycles, will be furnished by the Sao Paulo Light & Power Company and the initial motive power will be 8 freight and 4 passenger locomotives. The cost of the electrification is expected to be approximately \$2,000,000 and the work is being done by the International General Electric Company. The system to be used will be similar to that of the electrified divisions of the Chicago, Milwaukee & St. Paul, with a 3,000 volt overhead line and the locomotives are similar to those used by the Butte, Anaconda & Pacific Railway with the addition of regenerative braking apparatus. The eyes of Brazil are on this job and

none are going to watch its progress with more earnestness than the Paulista's affluent neighbor in the "neck of the bottle," the Sao Paulo Railway.

The road bed, like everything else on the Sao Paulo line, is excellent. Rails weigh 93 lb. per yard and are supported on rail chairs on each cross-tie, such as is the custom in England. The motive power on the level stretches of the line consists mainly of the conventional designs of British locomotives similar to those referred to in the previous articles on the railways of South America which have appeared in the *Railway Age*.

Those who have watched the Britishers' way with locomotives have recognized their disposition to prefer side-tank designs. This tendency has been carried out, perhaps to a fault, in many instances in South America, where the distances to be traversed would seem to call for locomotives of extra liberal tender capacities. It is not a novelty to witness one of these otherwise excellent machines almost anywhere in South America hauling a flat car loaded with wood or coal, as the case may be, in lieu of the tender. A hole cut in the rear of the abbreviated coal bin on the rear of the frame behind the cab admits of passing coal or wood to the fireman. One of these engines is shown in an accompanying photograph. There are some handsome Consolidations and ten-wheelers in service as well. Cars, like a majority of those in South America, are of wood, well built and similar to our own designs, rather light and are mounted on two four-wheel trucks.

The next, and final, article of this series will deal briefly with several other Brazilian railways and will discuss in some detail the prospects of developing an extensive market in that country for American railway supplies. This article will appear in an early issue of the *Railway Age*.

Department of Transportation Proposed

WASHINGTON, D. C.

CREATION OF A NEW GOVERNMENT department of transportation with a cabinet officer at its head, to coordinate the government's relations with rail and water transportation, including inland waterways and possibly motor truck transportation, and to take over the administrative as distinguished from the judicial functions of the Interstate Commerce Commission and the Shipping Board, is now under consideration by the Harding administration. The question is particularly under the consideration of a joint Congressional committee appointed by the last Congress to study and recommend a reorganization of the functions of the executive departments and a department of public works and a department of public welfare are also being discussed. As an alternative to the separate department of transportation another plan being studied contemplates making the present Department of Commerce, of which Herbert Hoover is now the head, into a department of industry and transportation. Mr. Hoover is anxious to develop largely the scope of the Department of Commerce for the purpose of making it in the widest sense a department of service to the commerce and industry of the country and some of the tentative plans which he is understood to have considered for the reorganization of his department were briefly outlined in the *Railway Age* last week. One feature of the plan understood to be considered was the establishment of a bureau of transportation in that department, but Mr. Hoover's plans are to a considerable extent contingent upon the results of the work of the joint Congressional committee. It is necessary to find out what departments are to be established before much can be done in the way of reallocating the functions of the various bureaus and commissions now in existence.

Secretary Hoover has discussed some of the phases of the proposed reorganization in his conferences with newspaper

men and on March 10 authorized a statement in which he discussed some of the general phases of the subject in part as follows:

In order to do service to the greatest advantage I wish to establish a wider and better organized co-operation with the trade and commercial associations, and will in a short time present some plans to this end. I want to see our efforts to push our foreign commerce more closely related to our industries. This sort of enlarged activity is within the original purpose of the department, and requires neither legislation nor burden upon taxpayers. This is no time to ask for appropriations to undertake new work. It is the time to search for economy and reorganization, for effective expenditure on essentials, the reduction of less essentials, and the elimination of duplication.

Outside of voluntary measures, the only immediate extension of service lies in securing greater internal efficiency in which I am certain all the bureaus join. The future of the department in its abilities to meet the needs of our industries and trade must await the thorough reorganization of the whole executive machinery, now being vigorously undertaken by Congress. The need of it, both in economy and to secure more definite purpose in government departments, does not need demonstration.

The great economic difficulties that we inherit from the war are obvious enough and they emphasize the necessity of better governmental machinery to assist in their solution. In the long run, we may as well realize that we must face a lower standard of living in Europe many years ahead. The production costs of her people will in consequence be lower than even before the war. If we meet this competition and still maintain our high standards of living we will have to work harder; we will have to eliminate waste; we will need to still further improve our processes, our labor relationship and business methods. If we would so improve our national efficiency and our foreign trade we must consider our transportation, both railway, water and marine, as one system directed to serve the nation as a whole. The development of certain trade routes through our mercantile marine as the real extension of our inland transportation; the improvement of great waterways; the opening of the Great Lakes to ocean-going vessels; the development of great electrification of our power necessities; and the handling of our labor readjustment by moderate men on both sides are all problems that have a fundamental bearing on the recovery in commerce and on our ability to compete.

If I were outlining one of the most essential directions for expansion of governmental activity, it would be in the constructive study and ventilation of the whole gamut of these possible improvements and of elimination of our great wastes in labor, in material, in power and a host of other directions.

There are some economic difficulties arising from the war that will no doubt solve themselves with time, but an infinite amount of misery could be saved if we had the same spirit of spontaneous co-operation in every community for reconstruction that we had in war. Government departments can at least try to do something to inspire such renewed co-operation. For instance, we have three or four million idle men walking the streets, and at the same time we are short more than a million homes; our railways are far below their need in equipment; our power plants, waterways and highways are all far behind our national needs in normal commerce. To apply this idle labor to our capital equipment is one of the first problems of the country.

Another outstanding economic trouble is that our farmers and our manufacturers are overloaded with food, raw material and goods that we cannot market abroad, and at the same time great masses of people overseas are cold and hungry. These people can only purchase on credit pending their own economic recuperation, and our own recuperation depends greatly upon theirs. We are thus not facing over-production, but a breakdown of credit links between us and the areas of under-consumption. Congress has provided the way for creation of foreign credits by banking co-operation under the Edge Act, and the logical and economic thing in the whole national interest is for our bankers to work something out. Foreign credits are better than rotten food.

There are some new forces in the world's commerce that must cause concern. There is a tendency in European nations to definitely mobilize the export, and in some cases the import, trades for militant commercial invasion. In some instances this is being done under government direction and organization, and often even with government finance; in others, it is being carried out by government leadership and suggestion. Such formal or informal combinations may render the position of our merchants and exporters precarious

indeed. Beyond this, where these controls are instituted over their own imports of cotton, food and other agricultural products, they seriously dominate the prices of our own farmers, and where they are instituted to secure control of the world's natural resources in minerals, oils, etc., they may dominate our future supply of these vital raw materials. Our competitors are within their rights in these matters, but we must protect ourselves. Our commercial community has the right in law and has been encouraged by Congress to combine for business outside our frontiers, precisely for the purpose of meeting such contingencies as this. But it all requires that our trades co-operate in an enlightened sense of national service as well as immediate interest.

All together, more economic taxation, tariff, large economy in government through internal bureaus, reorganization and agreements on disarmament and systematic government co-operation, will all contribute to help us out of the ditch. We will get out—yet when all is done the rapidity with which we get out will have depended upon the degree to which we pull together.

Stoker Fired Locomotive Makes Continuous Run Over Three Divisions

TO DEMONSTRATE that a trip for a locomotive need not necessarily be limited to one division of approximately 100 miles as has been generally the fixed practice on railroads for many years past, the Erie Railroad recently planned a test run by which one of its through New York-Chicago passenger trains would be hauled over three divisions, by one engine alone instead of using three engines for the three divisions as is the practice at the present time.

This test was based on the belief that the superior firing service of the modern mechanical stoker on heavy locomotives and long runs would render fire cleaning unnecessary at the end of each division. Continuous operation over the three divisions would be advantageous as it would eliminate the costs of terminal handling, such as changing engines, cleaning fires, coaling, turn table and roundhouse service, time consumed, etc. It was believed these charges could be divided by three.

Accordingly on February 24, heavy Pacific type engine No. 2926 equipped with a Duplex stoker attached to Erie train No. 3, consisting of one mail car, one express car, two coaches, two Pullman cars and one dining car left Jersey City at 12:18 p. m. for a continuous trip over the New York, Delaware and Susquehanna divisions, a total distance of 332.3 miles. The train arrived at Hornell, the final terminal, at 11:28 p. m. on time, having covered this distance without incident in 9 hours and 13 minutes.

On the return trip, February 25, the same engine left Hornell at 10:57 a. m., one hour and one minute late, with train No. 4, consisting of one mail car, one express car, two coaches, two Pullman cars and one dining car, arriving at Jersey City at 7:00 p. m. on time. There was no hand firing done nor was the rake used during the round trip of 664.6 miles.

The fire was clean on arrival at Jersey City terminal, the ash pan being reasonably free from ash and not in any way clogged; and insofar as the condition of the engine was concerned, it could have been placed on another train and returned to Susquehanna over two divisions, a distance of 192 miles. This trip demonstrated decisively the practicability of one engine covering three divisions, and this was only made possible by this high speed Pacific type engine being mechanically fired.

THE WESTERN RAILWAY CLUB at the Hotel Sherman, Chicago, on March 21, will listen to a paper by J. Gardner, electrical engineer of the Chicago, Burlington & Quincy, the subject of which is "Electrical Development and Standards in the Power and Lighting Field."

Railroads Hold Conferences on Wage Reductions

Disagreement Marks Conferences with Unskilled Laborers— Reductions for Other Employees Announced

DECREASES IN WAGE RATES for many classes of employees have been announced by several important railroads during the past week. In the meantime conferences will be held with these employees in the attempt to arrive at an agreement. Several roads have during the week held conferences with unskilled labor and the general disinclination of these employees to accept reductions would seem to indicate that the Labor Board will have to decide on the merits of many of these controversies.

The Erie has withdrawn all its wage reductions in conformity with the decision of the Labor Board, summarized in the *Railway Age* of last week, which ruled that these reductions were put into effect contrary to the rulings of the Transportation Act. The road will now reduce forces in practically every department in order to make the necessary reductions in operating expenses until such a time as the adoption of lower wage scales will permit of an increase in the number of employees.

A reduction in operating expenses was absolutely necessary, according to the management, in order to avoid a receivership and the most equitable way to meet it was to effect the necessary economies by throwing as few men as possible out of work and distributing the enforced hardship over a large number of officers and employees from the president on down. Since this method of meeting the situation was not permitted the company had no recourse but a drastic reduction in the number of employees. The failure of income to meet expenses has brought about a situation, the management says, which calls for immediate action and it will not be possible to await a reduction in wages which may be some time in coming.

Erie Calls Conferences

The company, in restoring wages to their previous levels, assumed the same position before the Labor Board as any of the other carriers seeking reductions in rates of wages of their employees and is now in a position to seek reductions in wage rates in the same manner as the other roads. Consequently conferences were called at Hornell, N. Y., for March 17 and 18 with the shop crafts employees, the maintenance of way and signal men, the clerical forces, telephone and telegraph operators, train dispatchers and several other minor classifications of employees whose wages it is proposed to reduce. In the event of an agreement regarding these wage reductions they will be put into effect on April 15. Otherwise the road will appeal to the Labor Board to establish a wage scale in keeping with the reduced cost of living and the financial position of the road.

New York Central Unskilled Laborers

Refuse to Accept Reduction

The New York Central held a conference on March 15 with representatives of unskilled laborers on its lines in regard to a proposal to reduce the wages of this class of labor 5½ to 14 cents an hour. The result of the conference was unsatisfactory. The employees refused to accept the reduction and the company has announced that it will appeal to the Labor Board to put in effect the reductions it asks.

The management pointed out following the meeting that not only did the representatives of the workers decline to accept a reduction in pay but that they also refused to "join the railroad in submitting the question" to the Labor Board. In reply to this latter statement, A. Spair, president of the

New York district of the Brotherhood of Maintenance of Way Employees and Railroad Shop Laborers said, "The railroads wish the pay reduced. The grievance is theirs and therefore it is up to them to take the case before the Labor Board. . . . Our attitude does not in any way mean that we are not willing to have the case go to the Railroad Labor Board."

In addition to the decreases in wage rates asked for unskilled laborers the New York Central has announced reductions in the pay of the shop crafts employees, maintenance department workers, clerical forces and several other classifications. These reductions are to take effect on April 16. In the meantime the company will hold conferences with representatives of the employees effected in the effort to get them to agree to the proposed reductions. In the event of a disagreement an appeal will be had to the Labor Board. The date and place of the conference with the employees has not yet been decided upon.

In announcing the reduction a statement was issued at the general offices of the company which said in part:

This move is on behalf of the rate-paying public and of general industry just as much as of the railroad. The wage rates imposed upon the railroads by war-time government operation, aside from the absurd restrictions, inequalities and abuses brought about by the national agreements, are entirely out of line with the standards of today in all other branches of industry. The railroads have been compelled by law to maintain artificial standards and unbusinesslike practices in the management of their forces. The Transportation Act, however, expressly provides that the railroads shall be economically managed, so this action is in strict conformity with the letter and the spirit of the law.

The New York Central Railroad, throughout the years preceding federal control, successfully maintained harmonious and satisfactory relations with a loyal and efficient force of high class workers in all branches of the railroad organization. It now proposes to eliminate the gross evils which have been imposed upon it through the unprecedented events of the past few years, and to get back to management that is in harmony with correct business practices, on behalf of giving the traveling and shipping public the utmost of good railroad service at the lowest possible price.

Chief among the evils which the public rightfully should demand to be eliminated in wage waste, involving the payment of vast sums for services not rendered and a loss of normal efficiency amounting in many departments to upward of fifty per cent. The public is entitled when it pays a dollar to receive a dollar's worth of service from a railroad the same as from any other business institution. Artificial and unwarranted high wage scales upon the railroads are detrimental to industry generally, as well as a direct burden upon the railroads themselves which the public must pay in high rates, with the more serious alternative of suffering the deterioration or break-down of the transportation machine upon which the prosperity of our whole population depends.

On behalf of the public, the railroads are combating the so-called national agreements and rules which have produced grotesque injustices and almost insurmountable handicaps to efficient management, before the Labor Board, now sitting in Chicago. Before this tribunal the railroads are presenting volumes of evidence upon this subject and a decision will be reached in due time. The Transportation Act and the rulings of the Labor Board provide that the railroad management shall confer with their own employees in advance of any revision of wages in an effort to arrive at agreement. The New York Central is conforming strictly to these rulings and the first of these conferences, covering its unskilled labor, was held last Tuesday, with further similar meetings to be held as the task of rehabilitation of the working personnel proceeds.

It is a noteworthy fact that up to date, the representatives of labor have entered no denial whatever to the statement frankly presented to them by the managers that existing railroad wages are decidedly out of line with those prevailing in other industries. The New York Central has in progress a comprehensive study of the going rates of compensation being paid for all branches of the

labor which it requires, so that its position with respect to fair treatment of its valued employees and essential business prudence may be correct and entirely justifiable.

The New York Central, following the refusal of its unskilled laborers to accept a decrease, asked the Labor Board to put a temporary decrease in effect on April 1 and to make the permanent decrease finally decided upon retroactive to April 1.

Pennsylvania to Confer with Employees

The Pennsylvania, which announced general reductions in wages and salaries in a statement which appeared in full in the *Railway Age* of last week, has announced the dates of the conferences with its employees to consider reductions. These conferences will be held at Pittsburgh as follows:

March 31, maintenance of way and other unskilled employees; April 2, signal department employees except signal foremen, assistant signal foremen and signal inspectors; April 4, shop employees, except supervisory forces; April 6, telegraphers, telephone men, levermen, etc.; April 8, stationary engine and boiler room forces; April 9, clerical and station employees; April 11, engine service employees; April 13, train service employees; April 15, train dispatchers, yard masters and assistant yard masters; April 16, shop supervisory forces, signal foremen, assistant signal foremen and signal inspectors.

The amount of the proposed reduction in each classification has not been announced. The reductions are announced to take effect April 20.

New Haven Seeks Reductions

The New York, New Haven & Hartford has announced that on April 15 certain reductions will be put into effect in the rates of pay of the following classifications of employees: Store department employees, clerical forces, station employees, operators of office appliances, office and messenger boys, skilled and unskilled employees, and foremen in the bridge and building departments, draw-bridge tenders and pumpers, supervisory forces and mechanical craftsmen in the mechanical department, stationery enginemen and boiler room employees, employees and foremen in the signal and electrical departments, dining car and restaurant employees and all other employees whose rates of pay were adjusted under decision No. 2 of the Labor Board effective May 1, 1920.

A conference was held with the unskilled laborers on March 11. No decision was reached at that time. The employees now have the matter under consideration. No conferences have been held as yet with the skilled workers and supervisory forces. In the event that the management and the employees cannot reach an agreement by April 15 the matter will be referred to the Labor Board for adjudication.

Other Roads Announce Conferences

Representatives of unskilled labor on the Philadelphia & Reading at a conference with the management held at Philadelphia on March 15 refused to accept the proposed decreases of from 15 to 25 per cent. Another conference will be held on March 29 at which time the representatives of the employees have agreed either to take final action on the company's proposal or to submit a counter proposal.

On March 15 an announcement of a reduction in wages of employees other than unskilled labor was issued by the Cleveland, Cincinnati, Chicago & St. Louis to take effect on April 16. The announcement invited conferences with the employees to decide their attitude on the question. The matter of a reduction in the rates of pay of unskilled labor has already been taken up by the company.

The Chicago, Indianapolis & Louisville has announced reductions in the rates of pay of practically all classes of employees with the exception of trainmen and engine

service employees, train dispatchers and telegraph operators.

The Delaware, Lackawanna & Western announced on March 15 that the rates of unskilled labor on its lines would be reduced, effective April 16, and that a conference would be held with the employees on March 23 to consider the reductions.

The railroads entering New York have announced that the wages of their marine workers in New York harbor will be reduced to substantially the same level as that which obtained on April 30 last, before the present wage scale was put into effect.

At the end of a four day conference with the management of the Gulf Coast lines at Houston, Tex., representatives of unskilled labor of that company on March 16 asked for several days in which to take up the proposed decreases in pay with the employees themselves. The decreases are scheduled to go into effect on April 6.

The Central of New Jersey has held conferences with representatives of unskilled labor on its lines relative to reductions in pay and will hold a final conference with these employees on March 24.

The Lehigh Valley held a conference on March 11 with representatives of its unskilled labor with the view of reaching an agreement to some reductions in the rates of pay. The representatives of the employees have asked until March 22 to submit a final decision. The reductions are scheduled to go into effect on April 4. The company has announced reductions in the rates of certain classes of skilled employees also, to take effect April 16. Conferences with these workers will be arranged later.

Cuyler Confers with "Big Four"

Warren S. Stone of the Brotherhood of Locomotive Engineers, L. F. Sheppard of the Order of Railway Conductors, W. S. Carter of the Brotherhood of Locomotive Firemen and Enginemen and J. E. Doak of the Brotherhood of Railway Trainmen conferred in Philadelphia on March 14 with T. DeWitt Cuyler, chairman of the Association of Railway Executives, on the proposal of the brotherhoods that "regional" boards be set for the settlement of disputes between employees and the managements of the carriers in each region.

The proposal of the unions some months ago that "national" adjustment boards be set up to deal with these differences was rejected by the Association on the ground that rules and working conditions could not be equitably determined for the nation as a whole. The proposal for regional boards may be looked upon as a compromise between the idea of adjustments on a national basis and that of having a local adjustment board for each individual road. Definite action on the proposal of the unions has not been taken as yet.

Atlanta, Birmingham & Atlantic Strike Continues

The Atlanta, Birmingham & Atlantic has resumed business on a small scale, on parts of its lines, having hired a few new men and taken back a few former employees who returned voluntarily. Receiver B. L. Bugg refused to enter into proceedings with Messrs. Chambers and Klutz, the government mediators, and they returned to Washington on March 12. Receiver Bugg said: "No matter what conclusion might be reached by arbitration, I could not pay any more money than the road earns, for the obvious reason that I would have no means with which to pay. The proposition is not susceptible to compromise."

At the beginning of this week a train was running (apparently on every other day) between Atlanta and Cordele, 171 miles, and one between Birmingham and Lineville, 104 miles. At the Birmingham end of the road some freight was moved.

The Railway Mail Service used automobile trucks to carry mail to some of the towns deprived of railway mail cars.

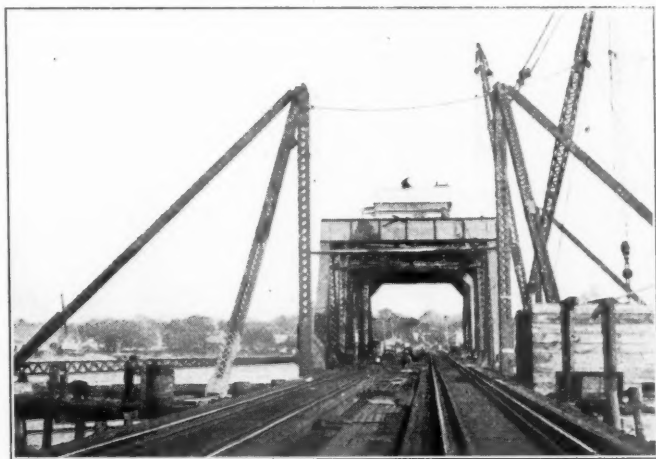


Lifting Out One Leaf of the Old Draw Span

Bridge Renewal Marked by Interesting Methods

The Replacement of the Mystic River Draw Span Involves an Interesting Erection Program

THE RENEWAL of a double-track swing span on the Shore line of the New York, New Haven & Hartford involved the construction of an interesting type of false-work. It also entailed the use of a temporary lift span operated by two stiff-leg derricks set up on each side of the track



General View of the Bridge

that were also employed for a portion of the erection and dismantling operations. The work was hampered by both railway and water traffic and had to be carried on with a minimum of interference with each.

The Shore line of the New York, New Haven & Hartford crosses the Mystic river in the outskirts of the town of Mystic, Conn., and at a point where the river empties into one of the many indentations in the Connecticut coast line. As the river is navigable, any bridge over it must care for both river and railroad traffic. The old structure was a double-track, through, pin-connected draw span of the rim-bearing type 178 ft. center to center of end bearings, and steam operated. The approach on either side consists of a pile trestle and an earth fill protected by retaining walls and rip rap. The old draw span was built in 1892 and for the

usual reason, namely—increased weight of traffic, had to be replaced by a stronger structure—a double-track, through, riveted truss draw span 181 ft. center to center of bearings. This is of the center or pivot-bearing type with wedges under the trusses at the center pier and is electrically operated.

As the old end piers were in very poor condition, it was necessary to replace them. This was done by cutting off the ends of each pier and building two concrete towers—one at each end—resting on piles. The end bearings of the new draw were later to be carried by a cross girder made up of heavy I-beams spanning transversely between these towers.



A Partial View of the New Superstructure

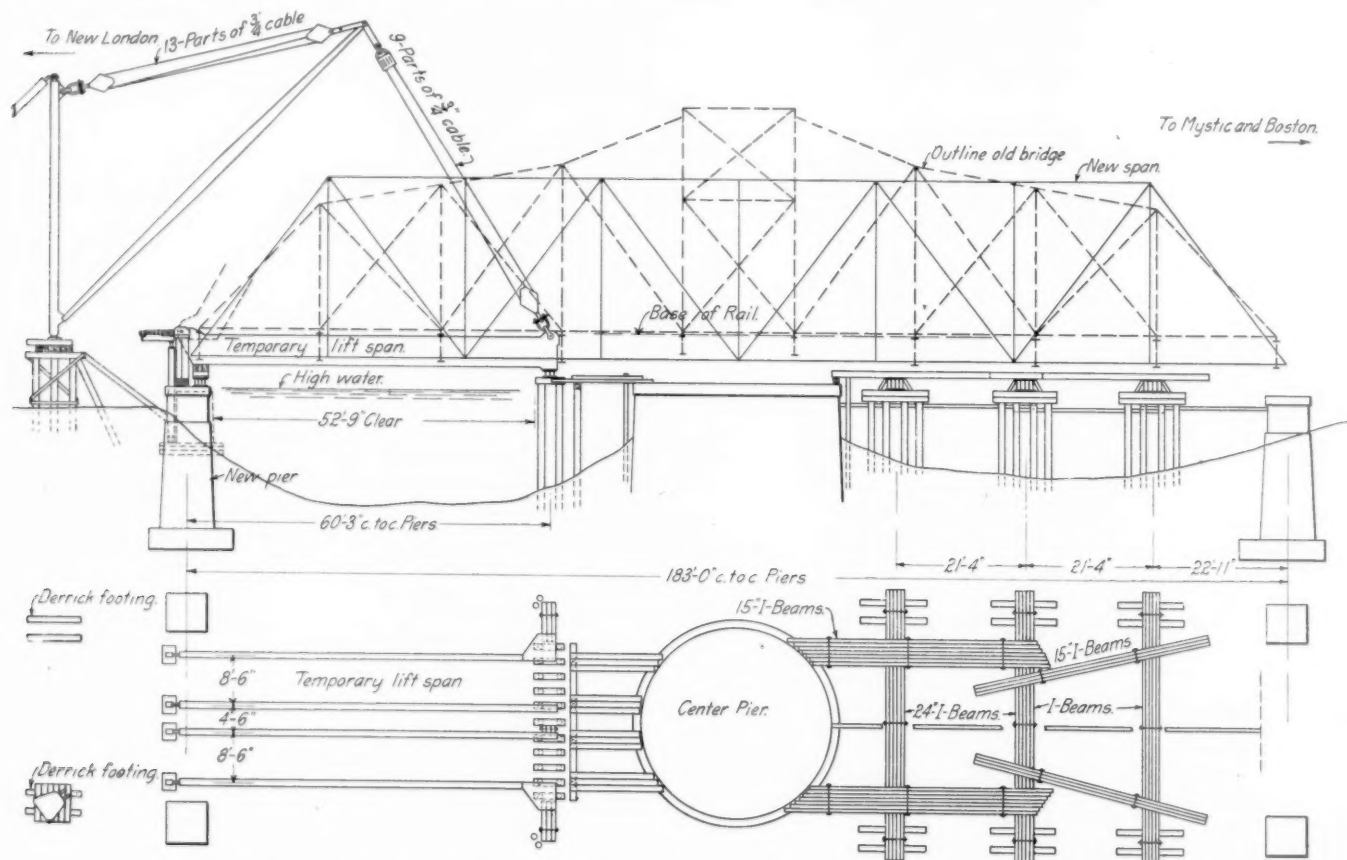
During the building of the towers, the ends of the old span were carried by temporary pile and I-beam supports.

The removal of the old span and the erection of the new bridge had to be carried on so as to interfere as little as possible with either the railroad or river traffic. The water at the bridge is shallow except for the channel dredged for navigation under the west arm of the bridge. The rail level across the bridge is low, so that there is but little headroom under the bridge. There is a total of about 12.26 ft. from base

of rail to mean low water. Because of these conditions the floating of the old or the new bridge intact would have been greatly hampered by the surrounding shallow water while a trestle run-around for traffic would have been very expensive. A further complication arose from the fact that the center pier also required considerable work done upon it before receiving the new bridge. All of these considerations made it advisable to erect the new bridge in the permanent position and at the same time maintain railroad service and river navigation. The latter consisted mostly of the passage of many fishing vessels, an occasional schooner and tugs with barges, the passage of which could be interrupted, when absolutely necessary, for a period of 36 hours.

In brief, the general erection scheme was to place falsework in the east channel, and at a predetermined time suspend navigation, block the east arm upon falsework, float

The hinge lift span in the west channel consisted of two single-track, deck plate girder spans braced together at the ends and at intermediate points, and with top and with bottom laterals. At the inboard end, the girders were connected to hinge shoes with the connecting pins at the elevation of the top of rail. These shoes were carried upon a timber bent which rested upon timber beams spanning transversely between the concrete towers, and in addition, were blocked upon the old pier. When the span was in a closed position for carrying traffic, the bottom flanges of the girders at this end were also supported on the I-beams of the permanent cross girder. At the outboard end, the girders were supported on 15-in. I-beams which were carried by a double pile bent driven in the channel west of the center pier. These girders were obtained by cutting in half the two girders of a 120 ft. draw span which had been removed from another



Falsework Plan and Elevation, Showing the Position of the Temporary Lift Span

out the west arm, and place in the west channel a temporary hinged lift span. Following this it was required to erect as much as possible of the new bridge with all necessary machinery for turning and later suspend navigation again for 36 hours and remove the temporary lift span and erect the west arm.

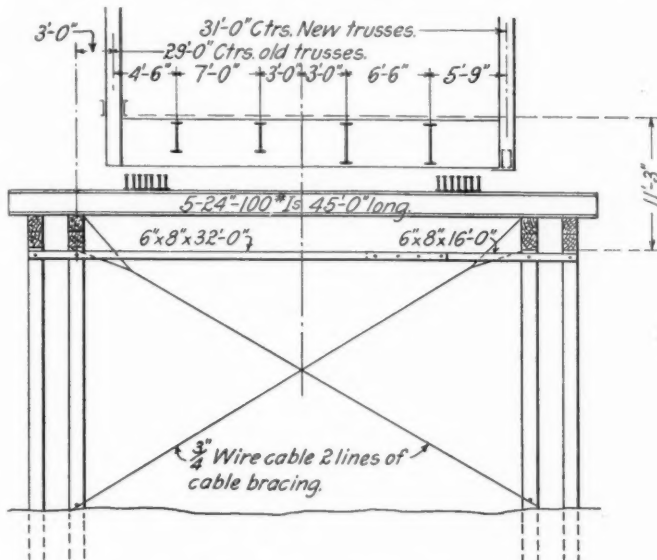
The falsework in the east channel consisted of 12 pile bents driven outside of the trusses, and arranged in pairs to receive the ends of 24-in. I-beams placed transversely of the bridge. Upon these I-beams, longitudinal 15-in. I-beams were inserted, upon which the old floor beams were later blocked up. As the caps were located close to the water, it was impossible to place any effective timber cross bracing, either transversely or longitudinally. However, submarine cross bracing of wire cable was placed transversely and the bents were shored longitudinally to the piers. The position of the piles outside of the bridge made it possible to drive them from a floating driver with little interference with the railroad traffic.

bridge, and were adapted to the work by the addition of bracing and suitable details at the ends.

To provide for the placing of the temporary lift bridge as well as for its operation, and any other necessary work, two 30-ton steel derricks with 70-ft. booms and two-drum hoisting engines were located on pile supports, one on either side of the trestle approach and near the west end of the bridge. The booms of the two derricks were set in a fixed position of about 45 deg., with the load falls secured to the outer ends of the lift spans, which were raised and lowered by operating the hoisting engines in unison.

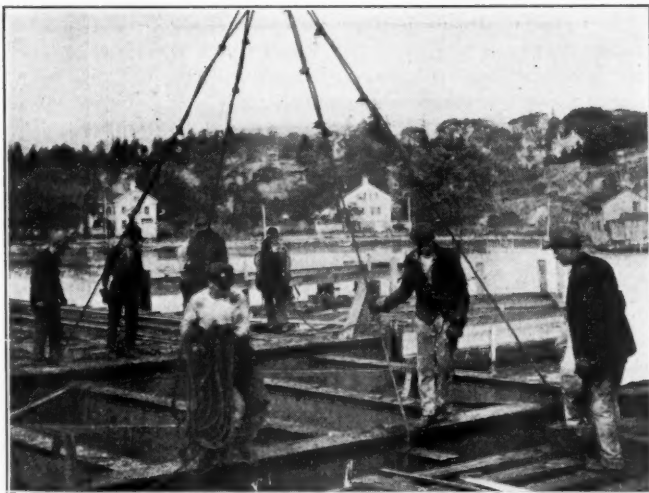
A 60-ton locomotive crane was provided for handling the erection. This was supplemented on occasions by another from a nearby operation. As traffic was heavy, a 30-ton steel derrick with a 90-ft. boom was erected on piling to the south of the bridge to take material from a storage space on piles at the east end of the bridge and carry on some of the erection or dismantling when the locomotive crane was not permitted out on the main line.

After all falsework in both channels had been completed and the derricks erected, the temporary I-beam supports carrying the west end of the old structure were replaced by the permanent pier girder. Later all navigation was suspended for 36 hours beginning at 5:00 a. m., and ending at 5:00 p. m. the next day. The east arm and the first panel



A Cross-Section of the Falsework

of the west arm to the west of the center pier, were blocked upon the falsework, and two deck barges with blocking were floated under the west arm. Rail traffic was suspended at about 6:50 a. m. and the two locomotive cranes were run out on the bridge over the center pier and hooked onto the first floor beam west of the pivot pier. The load falls of the two derricks for operating the lift span were hooked onto



Lifting Out the Last Panel of the Floor System in the Old East Arm

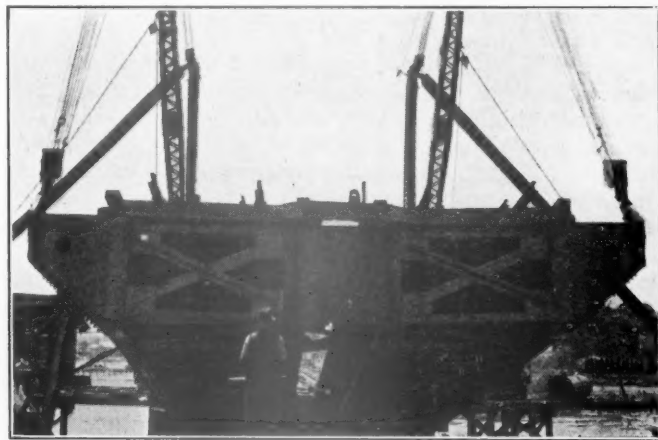
the west end floor beam. The trusses and bracing were cut through with acetylene torches on the east side of the first panel point west of the pivot pier. The cranes and derricks then lowered the three panels of the west arm to the boats and they were floated a short distance away. In the meantime the bent for supporting the hinge shoes of the lift span was placed, and various other details were perfected at the west pier.

Previously the girders for the lift span had been assembled

in pairs with their bracing and ties. One pair was then brought out on the trestle by the work-train, and the two derricks picked up the girders and set them to place in the west channel. Rail was laid on these; the second pair of girders brought out on cars on this track, and set to place by the derricks. The first track was ready by 10:53 a. m. and the first train crossed at 12:01. The second track was ready by 12:16 p. m.

On the following day the old west arm was dismantled on the boats lying in the west channel by all three derricks, and the various parts loaded on cars or set off in shallow water. The connections for the load falls were placed on the outboard ends of the girders, and these falls connected. By 5 p. m. of the second day the channel was clear and the temporary lift span ready to open for navigation, which was awaiting this moment.

The crane and the derrick then removed the remaining portions of the old structure and erected new material in the east arm and the first panel of the new west arm. This was riveted up, the operator's house built, and all machinery and electrical equipment installed, ready to operate the bridge as soon as the west arm was completed. In the meantime the changes were completed in the old pivot pier, and trans-



The Temporary Lift Span Partially Open

verse I-beams placed for distributing the load from the wedges under the trusses over the pier.

For the purpose of completing the erection across the channel navigation was again closed for 36 hours, beginning at 6:30 a. m., when the temporary lift was put out of commission. The remaining three panels in the trusses of the west arm and one panel of top bracing were then erected, using the locomotive crane and the derricks which had operated the lift span. At 6:34 a. m. on the following day railroad service over the bridge was stopped, and the west derricks removed the two pairs of lift span girders and loaded them to be carried away. All temporary material was cleared from the west pier, the pier girder shifted to permanent position and the floor system filled in and the portal placed. By 12:02 p. m. one track was ready and the first train moved across, and by 12:30 the second track was ready for traffic. The remaining top and bottom laterals were placed; also all shafting and machinery which had not been previously bolted in place on the bottom chords in the yard, and at 5:22 p. m. a partial opening was made to permit boats to pass through.

After this there remained the riveting of the west arm and any final adjustment of the wedges, the removal of the falsework and whatever old structure had been temporarily placed in the water, the removal of the derricks and a general cleaning up.

While the general sequence of the erection was not that

which is usually employed, the alinement and the deflections of the two arms of the bridge worked out satisfactorily.

The design and the construction of this bridge were under the direction of Edward Gagel, chief engineer of the New Haven; W. H. Moore, engineer of structures; I. D. Waterman, engineer of construction, and P. B. Spencer, resident engineer. The bridge was fabricated and erected by the American Bridge Company of New York, under the direction of J. B. Gemberling, manager eastern division, erecting department; H. H. Starr, assistant engineer, and E. R. Collins, foreman.

Benefits Derived from Apprentice Training*

By John H. Linn

Assistant Supervisor of Apprentices, A. T. & S. F.

WHEN THE WORK of apprentice training was first begun on the Santa Fe thirteen and a half years ago, we were told the object was not to make mechanical engineers, but skilled mechanics for our shops and round-houses, men trained and educated Santa Fe way. This we have done.

During this period we have graduated 1,528 of the best mechanics that can be found anywhere in the country; at least we think them the best. Certainly no others would be so well suited to our particular needs. During the next six months we will graduate about a hundred more, and so on.

Just as a manufacturing plant finds in the development of its primary product that certain by-products can be produced with but very little extra effort or expense, so we have found in training and developing mechanics, a number of other good results have been obtained, a few of which I wish to call to your attention.

First, I would mention the output in work performed by the apprentices. We do not like to speak about this, for we have always insisted that the ultimate output in skilled mechanics for our future needs is more important than the immediate output in work done by those being trained, but our more than 1,700 apprentices, under the supervision of competent shop instructors, have performed a surprising amount of work. But if you stop to think about it, it is not surprising. We not only teach our boys correct and up-to-date methods, but impress upon them that time is just as important as materials. Moreover, a young man can excel an older man in any contest requiring quickness of mind or of muscle. So it is not to be wondered at, that when you give him competent instruction, he can turn out a great amount of work, often excelling the older mechanic.

But to do this you will have to have a number of competent shop instructors, skilled mechanics themselves, to give him the instruction he needs in the shop. There is a by-product from the work of these shop instructors. They greatly assist the foremen, are able to relieve the foremen during the latter's temporary absence, and are particularly good material for selection to permanent positions as foremen or supervising officers. The salary of a shop instructor should not be considered as an expense but as an asset or investment. There is also a by-product in the work of the school instructor. In addition to instruction in the school room, he looks after all shop drawing, and sketching, and blueprints. He is frequently the only technical man around the plant. As such he is a very valuable assistant to the master mechanic or superintendent of shops.

The instruction of apprentices also has a very wholesome

effect upon the other men in the shop. They are more anxious to use up-to-date methods in a vain effort to keep these younger boys from surpassing them.

But perhaps the greatest by-product outside the making of skilled mechanics is the value to the company of the promoted graduate. Mr. Basford has told you what railways need is not new blood, but to circulate the blood we have. Many men would make good if given the chance. You do not always know what they can do until you try them. It has long been a policy on the Santa Fe to promote from within our own ranks. As evidence of this policy and of the fitness of our apprentice graduates, we have 220 of our graduates filling positions above the ranks, many of them positions of great responsibility. In fact the last three master mechanics appointed were selected from our roster of apprentice graduates. Remember, these are all young men who have been graduated in a little more than a decade. We shall have a great many more in another ten years. To what heights may not some of them climb?

Someone has said that the greatest good one individual can do for another is to help that individual become an independent self-sustaining member of society. We are doing this for our young men; we are teaching them the best way to help themselves is to co-operate with the management; that their own success and prosperity is dependent upon and closely linked with the success and prosperity of the corporation as a whole. We are endeavoring, too, to make them young men of upright moral character, good citizens, loyal to the corporation which they serve.

Commenting further on Mr. Basford's paper, I would like to emphasize what he said about labor turn-over. Did you ever stop to think how many men must be hired to maintain our normal forces; what this costs in mere clerical labor involved, what the cost due to breakage of machinery, due to work spoiled by newly hired help; what the loss to the company due to the time machinery is idle from time one man leaves until his successor actually gets on the job, what the cost due to increase in frequency and severity of personal injuries of ignorant and inexperienced employees, what the cost of training these new men to take the places of the men who quit, what the effect upon the older, more contented employees of this continuous influx of the boomer element, most of whom are generally disgruntled and dissatisfied? I think if railway managements could realize how greatly these factors enter into and affect the balance sheet and the cost of production and operation, greater attention would be paid to selecting, training, and placing men. There is no better way than by adopting and carrying out some system of definite training for the employees in the various departments. There is no time like the present for doing this. It is well known that when times are dull, building operations and extensive repairs to equipment may be carried on more economically and more successfully and with less interference with regular business routine than when business is at flood tide. Men and materials are both more plentiful and can be more carefully selected and tested. For these and similar reasons, times of depression are most fitting for the training of employees and for sifting out and building up the man power which, like buildings and equipment, will be so badly needed for the good times which are bound to return.

EIGHT MILLION DOLLARS is the total amount of the losses sustained by the American Railway Express Company, because of thefts of merchandise in transit, during the period of Government control, according to a statement made by W. A. Benson, assistant vice-president of the company, in the Federal Court at Macon, Ga., on March 15, in connection with the trial of 54 men indicted on charges of conspiracy to rob the company of more than \$1,000,000 worth of goods.

*From the discussion of the paper on foremen by George M. Basford at the February meeting of the Western Railway Club.

Two Interstate Commerce Commissioners Appointed

WASHINGTON, D. C.

PRESIDENT HARDING on March 11 sent to the Senate the nominations of John J. Esch, who has been chairman of the House committee on interstate and foreign commerce, and Mark W. Potter, who has been serving on the commission under a recess appointment by President Wilson which expired on March 4, as members of the Interstate Commerce Commission. Mr. Esch was appointed for the full term of seven years, succeeding Robert W. Woolley, whose term expired on December 31, and Mr. Potter for a term ending December 31, 1923. This leaves two vacancies upon the commission, one to succeed James S. Harlan, whose term expired on December 31, 1918, and one for one of the new positions created by the Transportation Act when the membership of the commission was increased from nine to eleven, for the term expiring December 31, 1924. Henry J. Ford, who has been serving under a recess appointment since last summer, was appointed to succeed Mr. Harlan, and James Duncan, first vice-president of the American Federation of Labor, was appointed for the other vacancy, but never accepted the appointment. The Senate committee on interstate commerce at once held a meeting and voted a favorable report on confirmation of the appointments by the Senate, but it was announced that Senator La Follette of Wisconsin, intended to oppose the appointment of Mr. Esch. Mr. Potter's nomination was confirmed by the Senate on March 12, but that of Mr. Esch was held over until the next session to allow Senator La Follette to file a minority report.

A photograph and sketch of Mark Winslow Potter were published in the *Railway Age* of May 14, 1920, at the time of his original appointment by President

Wilson. Mr. Potter was a member of the law firm of Hornblower, Miller, Garrison & Potter, of New York, and has been connected with the Carolina, Clinchfield & Ohio, of which he became counsel in 1905, chairman of the board in 1907, and president in 1911. He has been very active in the work of the commission, serving during the summer and fall on Division No. 5, which had charge of car service matters, and recently as a member of Division 4, which has particular charge of the financial matters within the commission's jurisdiction, such as the administration of the loan fund and supervision of the issuance of railroad securities.

John Jacob Esch has been in Congress since 1899, has been a member of the committee on interstate and foreign commerce for about 18 years, and has been chairman of that committee since 1919. He has manifested a special interest in railroad and transportation affairs in Congress and has played a very active part in the framing of railroad legislation. He was one of the authors of the Esch-Townsend bill, which was largely the basis for the Hepburn law of 1906,

and as chairman of the committee he had much to do with the framing of the transportation act of 1920. Mr. Esch was born at Norwalk, Wis., on March 20, 1861, graduated from the University of Wisconsin in 1882 and received the degree of LL.B. in 1887. He was admitted to the bar in 1887 and engaged in the practice of law at La Crosse, Wis., as a member of the law firm of Winter & Esch.

New York Commission and Automatic Stops

THE NEW YORK STATE Public Service Commission, Second District, has been asked by the New York Central to defer action looking to experiments with an automatic train-stop, and apparently intends to make no order in the premises until after a further hearing. Counsel for the road, at the hearing held by the Commission in Albany on March 10, objected to the issuance of an order requiring the road to install apparatus, asserting that the Federal Government having taken action, in Section 26 of the Transportation Act of 1920, the New York Commission had no jurisdiction in a matter of this kind. By that Act, Congress clothed the Interstate Commerce Commission with mandatory power to order the installation of safety appliances. It was claimed also that the proposed installation and tests would cost probably \$200,000. The counsel of the railroad company was accompanied by E. B. Katte, chief engineer of electric traction, who also is a member of the A. R. A. committee on automatic train control.

It appears that the request of the A. R. A. Committee that the Sprague automatic train control be tried on the New York Central has been favorably received by the

road; but with the suggestion, or condition that as the proposed test would be made for the purpose of general information and not for the benefit of the New York Central alone, the American Railway Association ought to bear the expense of the test.

Frank J. Sprague, who was present at the hearing, asked the Commission to consider that the expense of automatic stops would be offset by the savings from loss of life and property, and by possible increases in efficiency of operation and capacity of tracks. He suggested further that on sections of road made specially safe by automatic stops there might be an increase in passenger fares, on the same basis that passengers pay an additional sum for the better protection afforded by limited trains. He had already suggested to the Interstate Commerce Commission that the Federal Government provide funds for the promotion of automatic train control.

The Commission, whose report on automatic train control was abstracted in the *Railway Age* of March 4, page 497,



J. J. Esch

examined a number of devices besides those which were mentioned in that abstract.

The following five companies, responding to inquiries from the Commission, declared themselves ready to contract for an installation on the New York Central and to guarantee its adaptability to the conditions on that road: General Railway Signal Company, Rochester, N. Y.; National Safety Appliance Company, San Francisco, Calif.; Schweyer Electric & Manufacturing Company, Easton, Pa.; Sprague Safety Control & Signal Corporation, New York City; Union Switch & Signal Company, Swissvale, Pa.

The Commission finds the present status of the devices examined to be as follows:

General Railway Signal Company: Now being developed in the laboratory with intentions to make a further test on a short piece of track with one locomotive. Mechanical parts practically completely developed.

Union Switch & Signal Company: Complete laboratory demonstration developed, with all parts mechanically complete. Ready for track installation test.

Schweyer Electric & Manufacturing Company: This device has been subjected to test on a branch of an eastern railroad. Mechanically should be further developed. This is in process. Ready for track test after a few modifications.

Sprague Safety Control & Signal Corporation: Complete laboratory and mechanical development. Ready for immediate track test.

National Safety Appliance Company: Has been tried on a railroad in California, but has since been modified. Apparently ready for test within reasonable time.

New York Air Brake Company: Device has been developed and is installed on a locomotive in the yard of the company.

Regan Safety Devices Company, Inc.: Induction portion of apparatus not yet fully developed. Remainder of device in manufacturing stage, and on trial under operating conditions on 20 miles of double track railroad.

G. P. Finnigan: A test of the fundamentals of this device has been made on two railroads. Apparently the design of parts now recommended has not been developed beyond the making of drawings.

Pittsburgh Train Control Company: At present in the laboratory development stage.

Automatic Train Control Developing Company, Inc.: In the laboratory stage. Test on track could be made in a reasonable time.

The snow flangers used on the New York Central extend the full width between the gage lines of the track and extend downward $3\frac{1}{2}$ in. below the plane of the tops of the rails. The Commission says that these flangers would have to be changed so as to leave free a space in the center of the track 20 inches wide; for it would not be practicable to require the flanger to be raised at all of the points where track magnets, etc., would have to be installed. The Commission, in its report, intimated also that certain proposed devices designed to amplify electric current induced in receiving elements might need further development, as they have not yet been tried in signal work.

State Rate Case Argued in Supreme Court

WASHINGTON, D. C.

ORAL ARGUMENTS before the Supreme Court in the Wisconsin intrastate rate case, in which 43 states are contesting the order of the Interstate Commerce Commission increasing rates within the state by the amount of the interstate increases, were begun on March 11 and concluded on March 15. The state of Wisconsin was represented by M. B. Olbrich, the railroads by Alfred P. Thom and Bruce Scott, and the Interstate Commerce Commission by P. J. Farrell, while John E. Benton presented the argument for the state commissions generally. Mr. Olbrich did not contest the constitutionality of the Transportation Act, but contended that the federal commission had exceeded the

authority conferred upon it by the act. Mr. Benton contested the constitutionality of the 6 per cent rate-making rule of the act and also declared that if the order of the commission is upheld the states would be deprived of all rate-making powers. Both of the state representatives tried so hard to give the impression that the commission had merely ordered the rates increased for the purpose of increasing revenues without finding discrimination that Mr. Scott devoted a large part of his argument to the facts in the case and the commission's findings of discrimination. The chief justice at one time remarked that the principal argument seemed to be on the question of fact as to what the commission had found rather than on the question of its power because the state representatives, he said, seemed to concede that the Interstate Commerce Commission had power to correct discrimination.

Brief of I. C. C. Counsel

Extracts from the briefs in the case were published in our issue of two weeks ago. Chief Counsel Farrell of the Interstate Commerce Commission said in part in his brief:

We have shown that in making and issuing the order involved in this suit the commission did not exceed the authority conferred upon it by the interstate commerce act as amended by the transportation act, 1920, and in doing so we called attention to the provisions of law under which the commission operated. We think an examination of these provisions will be entirely sufficient to demonstrate that in making them Congress did not manifest any intention to interfere, or to authorize the commission to interfere, with rates, fares, or charges for transportation of passengers or property in commerce which is *purely* intrastate. The appellants contend that Congress did so interfere, and we understand this to be, in substance, the only claim advanced by them in support of their contention that the action of Congress referred to is unconstitutional.

We thus see that the power of Congress over interstate and foreign commerce is full and complete; that where it extends it dominates; that it was vested in Congress to secure uniformity of regulation against conflicting and discriminating state legislation and to protect the national interest by securing the freedom of interstate commercial intercourse from local control; that such power enables Congress to enact all appropriate legislation for the protection and development of interstate and foreign commerce; that this power necessarily embraces the right to control the operations of interstate carriers in all matters having such a close and substantial relation to interstate traffic that the control is essential or appropriate to the security of that traffic, to the efficiency of the interstate service, and to the maintenance of conditions under which interstate commerce may be conducted upon fair terms and without molestation or hindrance, and that, wherever the interstate and intrastate transactions of carriers are so related that the government of the one involves the control of the other, it is Congress, and not the state, that is entitled to prescribe the final and dominant rule.

That the constitutional power of Congress over interstate and foreign commerce, as that power is defined in the above-mentioned decisions, and in a large number of other decisions, of this court, which might be referred to, was not exceeded in enacting the provisions of law here involved is so clearly apparent, when the definitions are compared with the powers exercised, that, in our opinion, further argument in this connection is unnecessary.

In paragraph (4) of section 13 of the interstate commerce act, above quoted, it will be seen that all Congress did was to authorize the Interstate Commerce Commission to make orders which would remove and prevent any undue or unreasonable advantage, preference, or prejudice as between persons or localities in intrastate commerce on the one hand and interstate or foreign commerce on the other hand, and any undue, unreasonable, or unjust discrimination against interstate or foreign commerce; and that by paragraphs (2) and (3) of section 15a Congress simply authorized and required the commission to initiate, modify, establish and adjust rates so that carriers as a whole, or as a whole in each rate group or territory which the commission may from time to time designate, may earn an aggregate annual net railway operating income equal, as nearly as may be, to fair return upon the aggregate value of the railway property of such carriers held for and used in the service of transportation.

It is true, that by said paragraph (3) Congress fixed, for two years beginning March 1, 1920, the annual net railway operating income at $5\frac{1}{2}$ per centum of said aggregate value, except that it authorized the commission, in its discretion, to increase said percentage to 6. In this connection, however, we do not apprehend

that an effort will be made by the appellants to show that this action of Congress is in excess of its constitutional power.

At the time matters covered by the transportation act were being discussed, Congress was confronted with the necessity of preserving and strengthening the interstate common carriers of the country, and making them efficient and serviceable agencies for the transportation of interstate and foreign commerce, and also for the transportation of intrastate commerce. Under these circumstances we think it is obvious that the most important matter presented for consideration was the means by which the

necessary railway operating revenues might be secured. After several months of discussion, deliberation and reflection, Congress perfected and put into operation the plan now under consideration, and our understanding of a large number of decisions heretofore rendered by this Court convinces us that in taking this action, Congress did not exceed its power under the Constitution of the United States.

A brief was also filed by the National Association of Owners of Railroad Securities.

Shipping Board Asks Re-establishment of Rates

Shipping Board Asks Re-establishment of Export and Import Rail Rates Through Pacific Coast Ports

CHAIRMAN W. S. BENSON of the Shipping Board has recently asked the Interstate Commerce Commission to institute a proceeding of inquiry and investigation with a view to bringing about the re-establishment of export and import rail rates to and from points east of Chicago through Pacific coast ports in relation to the corresponding domestic rates on the basis which existed prior to the rate advance order of the director general of railroads in 1918, and the recent decision of the Interstate Commerce Commission in Ex Parte 74. In a letter to Chairman Clark of the Interstate Commerce Commission, Chairman Benson complained of the attitude of the eastern lines in failing to carry out promptly what he refers to as a promise made by the carriers at the time of the hearing in Ex Parte 74. Reviewing the situation, he says that for many years prior to the war, it was the practice of railways to maintain export and import rail rates through Pacific Coast ports on a basis lower than the domestic rates. This rate adjustment permitted the movement through the ports of traffic originating in or destined to territory both east and west of the Mississippi river. The exigencies of the war made it advisable for the director general to discontinue this practice temporarily and he accordingly on May 25, 1918, issued General Order 28, effective June 25, 1918, which cancelled all export and import rates and provided that domestic rates should apply to and from the ports. Early in 1919, requests were made to the Railroad Administration by the Gulf, South Atlantic and Pacific ports for restoration of the former relationship so that the ports might be placed in position to secure a reasonable share of the import and export traffic.

After a careful analysis the Railroad Administration made effective export and import rates lower than domestic rates via Pacific Coast ports to and from territory north of the Ohio river and east of the Mississippi river. Thereafter the Railroad Administration made effective export and import rates to and from the same eastern territory via South Atlantic and Gulf ports, using the same basis to determine the through rate as was used to determine the through rates via the Pacific Coast ports.

When the application for a percentage increase in rates was sought by all of the railroads in the United States in Ex Parte 74, Chairman Benson says, it was recognized that if the increases were allowed as applied for on a horizontal percentage basis, it would throw out of line the import and export rates via Pacific Coast ports, and attention was called to the fact that this would result at the time of the hearing on the applications.

Thereupon the Interstate Commerce Commission requested the petitioners to furnish for the record and for the information of the commission and the parties concerned, certain information. In response to questions propounded by the commission, the carriers through their counsel filed on June

8, 1920, their joint and several answer, which was designated Exhibit 1. The answer to the inquiry relating to export and import rates via Pacific Coast ports is quoted as follows:

"Export and Import Rates via Pacific Coast. Rates made to equalize the rail and ocean rates via the North Atlantic ports to be advanced the same amounts in cents per hundred pounds as the base point rate to and from North Atlantic ports is advanced."

"The questions propounded, including No. 11 as above set out," Chairman Benson says in the letter, "were presented to the carriers as a whole and not to any one carrier or any one group of carriers, and it was answered and filed in the record on the behalf of all carriers without reservation. No doubt the Interstate Commerce Commission in common with shippers and carriers relied upon the answer as one made by all the carriers without reservation, and it was regarded by all interested parties as a definite promise on the part of the carriers to expedite the readjustment and restoration of export and import rates via the Pacific Coast ports on the basis stated—a relationship and basis that was thoroughly understood by all concerned.

"Thereafter the interested transcontinental lines prepared a tariff on the basis as stated. The eastern lines refused to concur in the adjustment proposed by the transcontinental lines, giving as a reason that they could not afford to make the reductions that would result from the establishment of rates on the basis stated. This condition of affairs having come to the attention of the Shipping Board and having in mind the fact that several months had elapsed since the order in Ex Parte 74 was made and entered, it requested the executives of certain of the eastern roads to attend a conference or send representatives to confer on the subject of export and import rates at a meeting to be held in the office of the Shipping Board in Washington on February 4, 1921. The conference was held, on which occasion representatives were present on behalf of the following roads: Pennsylvania Railroad; New York Central Lines; Baltimore & Ohio; Erie; New York, New Haven & Hartford. There were also present Commissioner McChord of the Interstate Commerce Commission, Director of Traffic Hardie, and members of the Shipping Board.

"At said meeting it developed that after the order had been issued in Ex Parte 74, there had been a number of conferences between the representatives of Transcontinental lines and said Eastern lines, and that the proposition of the Transcontinental lines in respect to the establishment of export and import rates via Pacific Coast ports was rejected by the Eastern lines as they did not consider the proposition fair to them. Without further detail, the result of the conference was an agreement on the part of the chairman of the Shipping Board to call a joint meeting of the representatives

WASHINGTON, D. C.

of the Transcontinental and Eastern lines in New York at an early date."

Following this conference, telegrams were exchanged between George H. Ingalls, vice-president of the New York Central, and the chairman of the Board, including the following:

WASHINGTON, Feb. 17.

G. H. Ingalls, Vice-President, New York Central Lines, New York City. Your wire 12th advising conference has been held. Shipping Board greatly interested and would view failure to agree on fair basis as placing serious handicap on development American merchant marine. Particularly call your attention to answer submitted Interstate Commerce Commission Ex Parte 74 by Attorney Wood for all carriers in response to commission's direct question as to how export and import rates via Pacific Coast were to be adjusted. Rates made to equalize the rail and ocean rates via the North Atlantic Ports to be advanced the same amount in cents per hundred pounds as the base point rate to and from North Atlantic Coast Ports is advanced. All parties concerned expecting rail carriers promptly carry out this adjustment. In view of long time this matter has been under consideration board feels it should have your answer not later than Saturday, February 19.

BENSON, Chairman.

NEW YORK, Feb. 18.

W. S. Benson, Chairman, U. S. Shipping Board, Washington, D. C. Yours 17th. Would respectfully advise there are other considerations not outlined in statement before commission in Ex Parte 74 that Eastern lines consider part of any concurrence on their side in statement made by Mr. Wood. I beg to assure you that this question involves large revenues and is being dealt with by the lines in Eastern territory with as much dispatch as is commensurate with importance of subject.

G. H. INGALLS.

"The answer of Mr. George H. Ingalls is considered by this Board entirely unsatisfactory," Chairman Benson says in the letter, "and in view of the statement made in Ex Parte 74 heretofore referred to, meetings that have been held since by the interested parties, the failure to arrive at agreement and the time that has elapsed, the Board has concluded that there is no likelihood of an adjustment of said rates by the interested carriers within a reasonable time."

"The Shipping Board views the question involved as one of great importance and urgency. The Interstate Commerce Commission is aware of the export and import rates applying through Canadian ports to points on Canadian rail lines, and that said rates affect not only movement through the American ports and to Canadian territory but to points in the United States as well. The maintenance of these rates by the Canadian lines, and the failure to establish such rates by the American lines directly affects the business and operation of vessels of the United States Shipping Board and other operators, as well as the business of the Pacific Coast ports. The traffic of American rail carriers is also reduced. The failure and refusal by the American rail lines to establish export and import rates from the territory referred to through Pacific Coast ports is opposed to the expressed policy of Congress with respect to the upbuilding of an American merchant marine, and the use of the various ports of the United States as we understand the law and policy declared therein. After having exhausted every effort to bring about an amicable adjustment of this matter, the Shipping Board believes it to be its duty to do all possible to enforce and maintain the law and the policy with respect to the subject matter of this communication as declared by Congress."

"The policy of placing Pacific Coast ports as well as the Gulf and South Atlantic ports on an equality with North Atlantic ports as to through rates on export and import traffic in the large producing and consuming territory east of the Mississippi river and north of the Ohio river has long been recognized as a helpful one in enabling the operation of regular lines of ships to and from the ports on the different seaboards."

"The division of the country's import and export traffic to a reasonable extent among all ports places the different sections of the country in position to get minimum rates to foreign countries for local production, which production by itself would not support a regular line."

"The policy outlined above is generally accepted as being wise and in the best interests of the country as a whole, not only in connection with the particular matter involved herein, but in preventing congestion and securing a better use of the

ports and in tending to build up an American merchant marine of the greatest use and service. It is the opinion of the board that in both the Transportation Act and Merchant Marine Act, 1920, the policy herein above stated is recognized and approved."

"The board, therefore, appeals to and requests the Interstate Commerce Commission to institute a proceeding of inquiry and investigation into this matter at as early a date as possible, with a view to issuing such order against the interested carrier as it may find necessary and just, to correct the rate adjustment against which complaint is made, and to bring about the re-establishment of export and import rates to and from eastern territory through the Pacific Coast ports in relation to corresponding domestic rates on the basis which existed prior to General Order 28 of the director general, and the decision of the commission in Ex Parte 74."

Additional Payments Being Made on Railroad Guaranty

WASHINGTON, D. C.

ADDITIONAL CERTIFICATES for partial payments to railroads on account of their guaranty for the six months following the termination of federal control have been issued by the Interstate Commerce Commission and the Treasury Department is in most cases paying the certificates within a day or so of their issuance. The following certificates have been announced by the commission since those published in last week's issue, which brings the total of certificates since the passage of the Winslow bill up to \$49,777,990:

		Previously advanced
Chicago Great Western.....	\$1,335,000	\$1,700,000
Texas & Pacific.....	1,000,000	.....
Ulster & Delaware.....	219,800	.....
Tennessee Central.....	115,000	.....
Gulf, Mobile & Northern.....	200,000	528,000
Philadelphia & Reading.....	2,000,000	2,500,000
Raritan River.....	60,000	.....
Chicago, Milwaukee & St. Paul....	2,500,000	14,934,892
Chicago & Northwestern.....	12,000,000	.....
Chicago, Rock Island & Pacific....	6,000,000	.....
Chicago, Indianapolis & Louisville..	400,000	500,000

The Treasury Department has also announced the payment of additional loans from the revolving fund, which had been approved by the Interstate Commerce Commission, to the Hocking Valley for \$1,053,000; New Orleans, Texas & Mexico, \$234,000; Indiana Harbor Belt, \$579,000; Western Maryland, \$1,500,000.

The Interstate Commerce Commission has also issued a final certificate for \$114,414.91 to the Western Allegheny under Section 204 in settlement of its deficit for the period of federal control, after deducting \$527.05 owed to the Railroad Administration for traffic balances and other indebtedness.

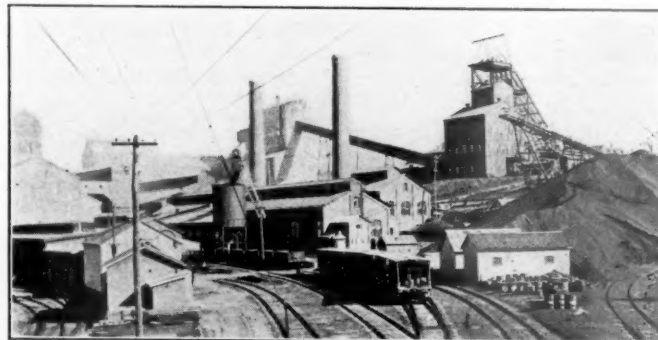


Photo by International

One of the World's Largest Zinc Mines, at Franklin, N. J.

Training and Developing the Railroad Worker*

Individual Must Be Studied Critically and Special Instruction
Given to Suit His Needs

By J. C. Clark
Assistant to General Manager, Oregon Short Line

THERE ARE TWO METHODS of training men. One is to provide instruction in the form of lectures, libraries, literature, etc. This does not contemplate rating or grading the individual, but simply provides the instruction

individual employee according to his value to the service, determine what his weak points are, and see that he gets the instruction best fitted to his needs.

A common method of providing instruction for employees is to fit up an instruction car and send it over the road in charge of a competent instructor. No doubt a great deal of good has been accomplished in this way and there is still room for good work along these lines.

One of the best means of offering instructions is the moving picture. This has not yet been developed as it should be, and it offers a field of wonderful possibilities. Films can be made showing the operation of the air brake, that will illustrate the action of the air pump, the manner in which the air flows from the main reservoir through the brake valve, the train pipe, the action of the triple valve, and all other parts of air brake equipment. This will be of immense value, because it will show the air actually flowing through pipes and valves, and the action of every part of the apparatus. This same idea could be followed out with the injector, superheater, valve motion, circulation in a boiler, combustion and any other subject that it is desired to illustrate.

The moving picture could also be used to give all classes of employees a larger outlook on their work. For example, a piece of freight could be followed from the time it is unloaded from the truck onto the receiving platform until it is delivered to the consignee, showing the proper manner of making up every form incident to the movement and the importance of keeping the proper record. It could show what happens if the proper record is not made, and if the piece of freight is damaged through rough handling or improper packing it could also be shown what procedure is necessary when the claim is made for damage. Too many railway employees do their work because someone has told them what to do, but do not understand the relation the part which they perform bears to the whole operation. Any instruction designed to broaden this outlook will unquestionably create more interest in the work and improve the morale. This suggests only a few things that can be done with the moving picture; the possibilities in this direction are enormous, and deserve immediate attention on the part of railroad managements.

Concentrate on the Individual

Instructing men in groups has accomplished good results in some cases, and as outlined in the last paragraph it can be developed along new lines that will be extremely beneficial. In order to accomplish the best results, however, it will be necessary to rate each employee according to his value to the service. Where a considerable number of employees are doing exactly the same work under exactly the same conditions, their value to the organization they serve can be measured by their output or production; these conditions, however, are seldom or never found in railroad work. In the railroad game a large number of men may be doing the same class of work, but it is always under varied conditions. It is therefore necessary to find some other means of rating employees. Psychologists have devised a means for doing this which they call the "method of limited impressions."

To illustrate the application of this method to railroad

TRAIN AND ENGINEMEN'S INDIVIDUAL PROGRESS REPORT	
Name <u>JONES, WALTER A.</u>	
Occupation <u>CONDUCTOR</u>	Division <u>CENTRAL</u>
District <u>2</u>	Class Work <u>LOCAL FREIGHT</u>
Note: Before making out this report, read carefully instructions and definitions on the back.	
Qualification	Rating
Intelligence	9
Judgment	8
Sense of Responsibility	8
Obedience of Rules	8
Vigilance or Alertness	8
Team Work	10
Powers of Observation	9
Punctuality and Steadiness	10
Knowledge of Equipment	8
Loyalty	9
Character and Habits	9
Disposition and Temperament	6
Do you consider the subject of this report capable of filling a position of more responsibility? <u>YES</u>	
Have you any recommendation to make with reference to this employee?	
Remarks	Signed <u>EDWARD HINCKLEY</u> Title <u>TRAIN MASTER</u>

Fig. 1—Train and Enginemen's Individual Progress Report Card

and leaves it optional with the man whether or not he will take advantage of it. The second method is to rate each

*This is the third of a series of articles on personnel problems. The first one, "Labor Turnover—Not a Disease, but a Symptom," was published in the *Railway Age* of December 31, 1920, page 1157. The second, "The Functions of a Railway Employment Service," was published in the issue of February 4, page 329.

work, Figure 1 is submitted; this shows a train and engine-men's individual progress report card, which is filled out to show the manner in which a trainmaster would make a report on a conductor. In choosing the 12 qualifications shown on this card, a list of about 100 qualifications was made that would seem to be necessary in a first-class train or engine-man. By a process of elimination and consolidation, these were boiled down to 12, which, in my opinion, are the chief qualifications of a first-class train or engine-man. No doubt there are many who will not agree with me, but as a matter of fact any limited number of qualifications that describe in a broad way the best type of train or engine-man, or any other worker, will answer the purpose.

Before describing the manner in which this progress report is handled, it is well to emphasize the necessity of defining very carefully each qualification named on the report. For example, intelligence may be defined as ability to learn. It is, however, of many different kinds. A school child may have the ability to learn mathematics, but be very lacking in the ability to learn grammar. You could not say that this child was not intelligent. The term intelligence, as used here, means the ability to learn or catch onto the particular work which the employee is doing. Judgment is the ability to combine knowledge and experience to control actions in such a way that future developments will be in proper sequence and result in safety and efficiency.

In studying the qualifications which apply to various classes of railway employees, it will be found that the dictionary definition will not correspond with the generally accepted meaning as applied to railroad work. It will also be found that various railroad officers will have a different understanding of the same term. It is, therefore, of the utmost importance that each term be defined very carefully and that the definitions be printed on the back of the card, together with instructions as to the handling of the card. Each qualification is given a value of 10 points, so that a perfect score in the 12 qualifications named would be 120

SUR- NAME GIVEN NAME DATE M D Y		REPORTED BY		INTELLIGENCE	JUDGMENT	SENSE OF RESPONSIBILITY	TOUGHNESS TO RULES	VIGILANCE OR ALERTNESS	TEAM WORK	POWERS OF OBSERVATION	KNOWLEDGE OF EQUIPMENT	PUNCTUALITY	STEADINESS	LOYALTY	CHARACTER AND HABITS	DISPOSITION AND TEMPER	TOTAL	PERCENTAGE	AVERAGE
JONES WALTER																			
7	8	20	ED. HINCKLEY	9	8	8	8	8	10	9	8	10	9	9	9	6	102	85	
7	14	20	E.T. BALL	8	8	8	9	8	7	8	9	8	6	8	8	8	95	79	82
8	7	20	G. MILLER	8	8	8	9	7	9	7	9	9	8	8	8	9	99	83	82

Fig. 2—Combining the Individual Reports on One Employee

points. In the illustration shown in Fig. 1 the total number of points is 102. By dividing this total by 120, the perfect score, you obtain a percentage of 85. Each supervising officer would be required to make periodic reports on this form covering every man under his direct supervision.

Fig. 2 illustrates the manner in which this record would be kept. In the case of Conductor Walter Jones, which is given for illustration, the first report from Trainmaster Hinckley gives him a percentage of 85. The second report gives him a percentage of 79. The average of these two reports is 82. The third report gives him a percentage of 83. The average would be 82 plus. It will be seen that by the time a man has been in the service a year or two, a sufficient

number of reports from division officers will have been received so that the last average shown would give a very definite rating of the man's real ability and value to the service. Moreover, this figure will be as free from personal prejudice as it is possible to make it.

When supervising officers who make these reports become thoroughly familiar with the manner in which they are handled, they will be careful not to express personal prejudice in the reports, but will make them as impartial and unbiased as they possibly can. The reason for this is because they know that the report they make on any employee is going to be compared and averaged with reports made on the same

Employee reported upon				Date	Name	Co.	P	A	Date	Name	Co.	P	A
Date	Name	Co.	P	A									
7-4-20	EDWARD DAVIS	COND	73										
7-8-20	EARL C. WEBB	COND	10	77									
7-8-20	WALTER A. JONES	COND	15	79									
7-9-20	JAMES J. WHITE	COND	12	80									
7-11-20	CARL L. BROWN	COND	19	82									
7-11-20	GEORGE RALLISON	COND	10	81									
				(Computation)									
				(Percentage)									
				(Average)									
Name				EDWARD HINCKLEY									
Official Title				TRAIN MASTER									

Fig. 3—The Reports Made by Each Officer are Tabulated

employee by other supervising officers, some of whom may be superior in rank.

Furthermore, each supervising officer's reports will be listed and averaged as shown in Fig. 3. This form would be kept primarily as a check on the employees reported upon by the various supervising officers. But when the number of employees reported upon by a single officer has run up to 200 or 300, the average percentage of all of these reports, when compared with the average percentage of other officers will be a very good indication of whether or not the officer is giving proper attention to the work.

For example, if Trainmaster Hinckley has reported on several hundred employees, and the average of all of his reports is 81, and Trainmaster Ball has reported on approximately the same number of employees and the average of all of his reports is only 65, it would show at once that either one or the other was too far away from the average of all reports made. The good, poor, and indifferent are found among the employees of the different divisions and departments in about the same ratio, and in the long run the average of all reports made should show approximately the same figure. Any individual officer's reports that vary too much from this figure would show that he was not giving proper attention to the work or was not qualified to handle it.

Effect on Supervising Officer

The fact that supervising officers would be forced to study their men with respect to the qualifications named would tend to better supervision and more thorough understanding of the individual. This is important because it lessens the element of chance. The supervising officer may have a dislike for one of his men because of some personal characteristic, but when he comes to analyze the man with respect to the qualifications named, he may be forced to decide that the man is a well qualified employee. On the other hand, he may have taken a particular liking to some one of his men, but may find on closer analysis that this man lacks some of the most important qualifications.

To get back now to the individual employee. Let us con-

sider how this method of rating could be used in the best manner. When this system has been thoroughly established, a list should be made of all employees in a given class and an average percentage rating obtained for the entire class. We will suppose, for example, that the average for an entire class of employees was 75. Any employee whose rating fell below 75 would be called in by the supervising officer and informed that his rating was not up to the average of his class. He would be shown his rating card, which would indicate the qualifications in which he was deficient. He would be given the necessary instruction to improve his service and he would be told that his performance would be watched very carefully and every aid possible afforded him to improve his service and make good. Every supervising officer who had contact with this employee would be notified to help him in every way possible, by individual instruction, furnishing literature or other information that would be of aid, and in fact exert every effort to make the man see that he must improve his service or become a failure. Every employee who raises his individual average under this treatment would tend gradually to raise the average for the entire class, so that eventually a much higher average could be attained.

This system of rating could be applied to practically all classes, of railroad employees, particularly in the higher crafts, the only thing necessary being to choose the most important qualifications applying to each class of work. The same methods of handling men who fall below the average could be followed and the same results obtained.

This method also provides a basis for the selection of employees for promotion, which is a most important feature. With information available that would show the rating of every man in all classes of employment, it would only be necessary to review the record of about 10 men with the highest rating from the class in which the promotion was to be made, and give each of these 10 men special study to determine which one was best fitted for the new position. If this policy were adopted and followed religiously, all employees would soon come to know that their promotion depended entirely upon their individual qualifications and this fact alone would have a wonderful effect, improving the morale, creating more interest in the work, more loyalty, more initiative, and increased safety and efficiency, resulting in better service and greater safety for the public.

A Test to Determine the Cost of Pneumatic Tie Tamping

A TEST WAS RECENTLY CONDUCTED by the Delaware, Lackawanna & Western, in conjunction with the Ingersoll-Rand Company of New York, for the purpose of establishing some basic cost data on pneumatic tie tamping. The test was made on a stretch of main line track between Boonton, N. J., and Lincoln Park, the railroad furnishing the equipment and men to do the work. The plant consisted of an Ingersoll-Rand four tool compressor with hose and tampers. The work was done by a contractor who paid his men 55 cents an hour, but the data on the test have been compiled in such a way that the cost for any other rate of pay may be readily ascertained.

The Lackawanna required that only such time and other costs be charged as actually applied to the machine and its operation in the performance of its duty of tamping ties, and on that basis the following methods were used. For instance, the machine being a four-tool outfit, four men were used on the "guns" or tampers and their time was charged only when actually employed tamping. The foreman's time was charged only during the period that the machine was in actual operation, while the operator's time was charged for the full day whether or not the machine was in actual use.

This was done in view of the fact that it was deemed good policy to have the operator go over his machine carefully and thoroughly when not in operation.

The gang consisted of 40 to 50 men. However, only those actually working with the machine were charged to tamping. Such work as jacking up the track, cleaning the ballast, replacing ballast, putting in new ties equipped with tie plates and screw spikes, was conducted by the remainder of the gang. The ballast consisted of crushed stone of 2½-in. mesh, with 105-lb. rail laid on creosoted ties with tie plates and screw spikes, all of the Lackawanna standard specifications.

The man compiling the data was in no way connected with the operation of the machine nor did he make any repairs and, with the exception of selecting a capable operator and instructing him originally in its operation, etc., he had nothing to do with the machine. The operator was not a mechanic and although he was fairly familiar with automobiles, he possessed no particular qualifications with reference to the machine or its operation. The men used on the tampers were all picked at random and were changed about every three or four days so that no specially trained men were used in connection with the operation of the machine or the tampers. In determining the number of ties and the lineal feet of track tamped, owing to the fact that the track was raised as high as 6 in. in many instances, run-offs were necessary and such ties as were tamped in the run-off as well as the lineal feet covered were counted in on the total for the day.

Throughout the duration of the entire test, which covered eight consecutive weeks, the tamping outfit was out of service 2½ hr., of which 1 hr. was due to the battery being exhausted and time consumed in waiting for a renewal, while the remaining 1½ hr. was due to dirt and water, making it necessary to remove and clean the carburetor and feed pipe. All the time so consumed was charged against the machine.

The summary of the results shows that for the eight weeks' run the average cost for tamping, including all items, was 11.3 cents per tie or 6.2 cents per lineal foot of track.

To determine a fair comparison or equation it is necessary to separate the average total cost into its component parts and to then reduce each part into its determining factors. These factors consist of a constant which, multiplied by the wage scale, will give the cost per tie for that particular item of the total cost. In reducing the total cost of \$1,155.92 for tamping 10,226 ties or 18,358 lineal feet of track, it will be found that this is made up as follows:

Items	Cost	Per cent	Cost per tie	Constant
Foreman	\$169.06	14.62	1.65	0.024 × wage
Operator	258.50	22.36	2.53	0.046 × wage
Labor	565.40	48.90	5.52	0.103 × wage
Gasoline	148.06	12.82	1.45	0.053 × price
Oil	9.38	0.81	0.10	.....
Grease	2.04	0.18	0.02	.....
Repairs	3.48	0.31	0.03	.....
Total	\$1,155.92	100.00	11.13 cents	.....

The constant as shown in the right-hand column consists of the figure which, multiplied by the wage scale of the man or men doing the work of tamping, will give the cost per tie for tamping by compressed air. For example, with a foreman receiving \$5.27 per day, or 66 cents per hr., with labor at 46.4 cents per hr. and gasoline at 27½ cents per gal. the proportionate cost per tie would be 0.024 times 66 or 1.58 cents; 0.046 times 46.4 or 2.12 cents; 0.103 times 46.4 or 4.78 cents, and 0.053 times 27.5 or 1.45 cents. This adds up to 9.93 cents to which should be added 0.15 cents for oil, grease and repairs, this cost remaining practically the same with the machine in good order. The result is a total cost of 10.08 cents per tie for tamping pneumatically or on a basis of 20 ties per rail length a cost of 6.11 cents per lineal foot. Other wage scales may be substituted in the manner outlined and the basic cost for any particular piece of work derived.

Standard Locomotives for the Argentine State Railways

THE NEW ARGENTINE RAILWAY ADMINISTRATION is exerting its greatest efforts towards the unifying of locomotive and rolling stock types and the standardization of its equipment, so that the efficiency of the state railways may be brought to the high level of the best operated railways in South America. With the addition of 25 Mikado type locomotives recently completed by the Baldwin Locomotive Works, the state railways will possess 125 freight locomotives, duplicate in all their parts.

The Argentine railways during the world war deferred the placing of even the most essential orders for additions to their motive power because of the difficulty of securing deliveries. Since the signing of the armistice, however, a number of contracts have been placed with American and British locomotive manufacturers and negotiations are under way with German locomotive builders. Previous to the war most of the locomotives and cars were supplied by British manufacturers. This was due mainly to the fact that most of the private railroad corporations are British owned and

erected in the Laguna Paiva shops of the company. Detailed specifications are listed below:

General Data:

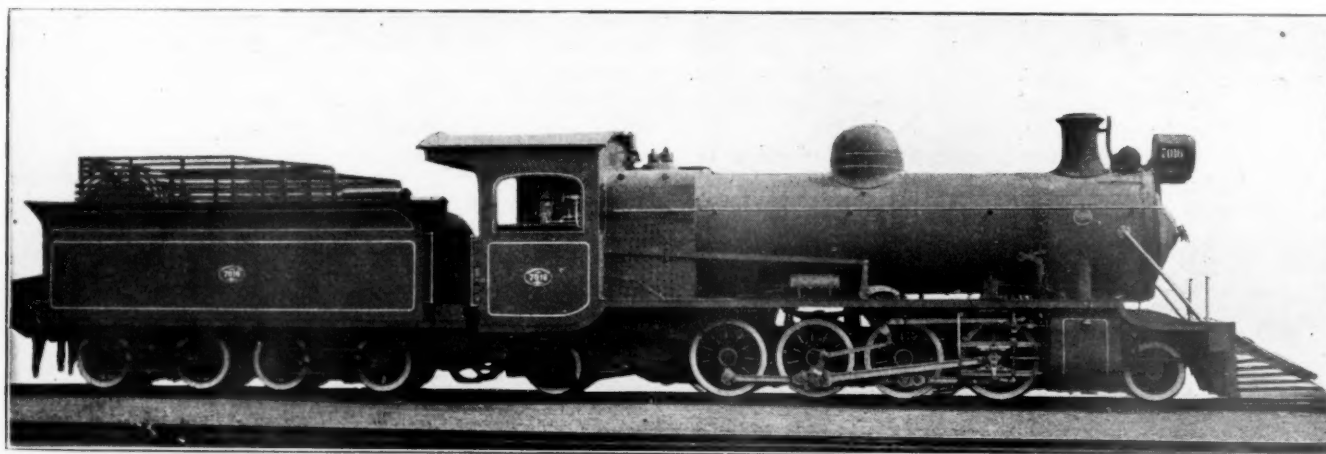
Gage	1 meter.
Fuel	Wood or coal.
Cylinders	457 mm. by 560 mm.
Weight in working order	59,550 kg.
Weight on drivers	45,500 kg.
Weight on leading truck	6,750 kg.
Weight on trailing truck	7,300 kg.
Weight of engine and tender in working order	97,550 kg.
Wheel base, driving	3,600 mm.
Wheel base, total	7,975 mm.
Wheel base, engine and tender	14,625 mm.

Wheels:

Driving, diameter over tire	1,067 mm.
Driving, thickness of tires	80 mm.
Driving, journals, diameter and length	184 mm. by 205 mm.
Engine truck wheels, diameter	780 mm.
Engine truck journals, diameter and length	127 mm. by 203 mm.
Trailing truck, wheels, diameter	780 mm.
Trailing truck, journals, diameter and length	127 mm. by 203 mm.

Boiler:

Style	Straight top.
Working pressure	12.7 kg. per sq. cm.
Diameter	1,500 mm.
Firebox, length and width	1,806 mm. by 1,412 mm.
Tubes, number and outside diameter	140—51 mm.
Flues, number and outside diameter	21—137 mm.
Flues and flues, length	4,300 mm.
Heating surface, tubes and flues	137.9 sq. m.
Heating surface, firebox	10.2 sq. m.



One of the New Mikados on the Argentine State Railways

operated and also to the fact that a great number of the railway officers of the state railways have been taught railroading under British supervision and are accustomed to British equipment.

In order to assist the state railway engineers in standardizing their motive power, the Baldwin Locomotive Works guaranteed to construct these 25 locomotives to all of the railway requirements. The working drawings with dimension according to the metric system were completed in April, 1920—two months after the order for these engines was placed. To make the earliest delivery possible, the Baldwin company transported large quantities of materials by motor trucks, thus avoiding delay due to railway congestion and the steel strike which occurred at that time. The locomotives were completed between July 3 and September 15, 1920, and the first shipment made direct from the Eddystone Works to Santa Fe, Argentina.

These locomotives are of the most up-to-date type, and have open bar frames of cast steel. They are equipped with the Superheater Company's superheaters having an area of 40.6 square meters each and are provided with a modern automatic damper arrangement. Westinghouse air brakes are included in the equipment. Outside bearings are used on the trailing trucks, which are of the Hodges design.

These locomotives are also equipped with electric headlights operated by a turbo-generator set which supplies a current for electric lights at the steam, air and water gages in the cab. The last two of these engines are now being

Heating surface, total	148.1 sq. m.
Superheating surface	40.6 sq. m.
Grate area	2.55 sq. m.

Tender:

Water capacity	3,300 imp. gal.
Fuel capacity	5.9 gross tons.



Photo by Ewing Galloway

The Southern's Station at Atlanta, Ga.

Railway Executives Summoned by Labor Board

Employees Expect to Prove Workability of National Agreements
by Cross-Examining Witnesses

ON THE INSISTENT demand of Frank P. Walsh and B. M. Jewell, respectively counsel and spokesman for organized railroad labor, Robert S. Binkerd, assistant to the chairman of the Association of Railway Executives; General W. W. Atterbury, vice-president of the Pennsylvania, and chairman of the association's disbanded labor committee; Carl R. Gray, president of the Union Pacific, and a member of the labor committee before its abolishment, and Thomas DeWitt Cuyler, chairman of the association, have been summoned by the Railroad Labor Board to appear before it on March 18 as witnesses in the hearings on the demand of the employees for continuation of their national agreements.

In addition, the following, all members of either the old labor committee or the Conference Committee of Managers of the Association, have been notified to hold themselves in readiness for a similar call: Hale Holden, president of the Chicago, Burlington & Quincy; C. H. Markham, president of the Illinois Central; H. E. Byram, president of the Chicago, Milwaukee & St. Paul; W. G. Besler, president of the Central Railroad of New Jersey; E. E. Loomis, president of the Lehigh Valley; J. H. Young, president of the Norfolk & Southern; J. H. Hustis, president of the Boston & Maine; N. D. Maher, president of the Norfolk & Southern; W. R. Scott, president of the Southern Pacific, Texas and Louisiana Lines; J. W. Higgins, executive secretary of the Association of Western Railways; C. P. Neill, manager of the Bureau of Information of Southeastern Railways; A. W. Trenholm, vice-president of the Chicago, St. Paul, Minneapolis & Omaha, and J. G. Walber, secretary of the Bureau of Information of Eastern Railways.

Mr. Binkerd has been requested to bring with him the minutes, letters, recommendations and other records having to do with the proceedings of the association and its labor committee with reference to the dispute now before the Board.

These developments were brought about by the adoption of resolutions by the board on March 14 after Mr. Walsh and Mr. Jewell had maneuvered for additional delay and again declined to meet the issue, namely, the justness and reasonableness of the national agreement now in effect. The board's order, however, states specifically that these witnesses are called "to give testimony on the reasonableness or unreasonableness of the so-called national agreements."

After a delay of two weeks, granted by the Board to Mr. Jewell to prepare his rebuttal statement to the presentation which had already been made on behalf of the carriers, Mr. Walsh and Mr. Jewell appeared before the board on March 14, stating in substance that "it will be impossible for us to proceed with the presentation of our case until the witnesses we have called for have been subpoenaed and have presented themselves for examination." Mr. Walsh specifically requested that Mr. Binkerd be subpoenaed first to present the minutes of the meetings of the labor committee of the association. Following the presentation of this material, Mr. Walsh said General Atterbury and Mr. Cuyler would be cross-examined by the representatives of the employees in the order named. Then, Mr. Walsh stated, the other members of the labor committee will be called to the stand, followed by the financiers, as requested in their original subpoena demand, which has been reported in the *Railway Age* of February 11 (page 367).

During the course of Mr. Walsh's opening remarks it developed that in reply to the employees' request for subpoenas, the Board, before taking action, had requested them to state what

they expected to prove from the testimony of these witnesses. In reply to this Mr. Walsh stated that the employees expected to establish:

(1) What led to the carriers' decision to have national agreements abrogated; (2) why the carriers have refused to meet representatives of the employees on this subject; (3) whether the executives are fundamentally interested in doing away with the waste and extravagance chargeable to the national agreement; and (4), whether these executives really believe that national agreements are unworkable, unjust and unreasonable.

The absence of the executives from the hearing on March 14 indicated, Mr. Walsh charged, that the carriers were not acting in good faith in this case, inasmuch as the expressed desire of the employees to question these men had been widely circulated.

At the suggestion of Henry T. Hunt, acting chairman in Judge R. M. Barton's absence, the board then adjourned to consider the employees' request. Mr. Hunt's remarks indicated that many members of the Board were heartily opposed to bringing these witnesses before the Board. However, a portion of Mr. Walsh's remarks also indicated that he was aware of this feeling. In requesting again the subpoenaing of the men, he addressed his remarks first to the Board as a whole, then to "any group or to any individual on the board which recognizes our fundamental rights." The provisions of the Transportation Act give the Board, as a whole or each individual thereon, full power to subpoena any witnesses which the board or the individual deem necessary to complete the evidence in any case.

In addressing the Board on March 14, Mr. Walsh said in part:

"My clients are in no sense responsible for the delays in these proceedings, nor will they remain silent under any such imputation. We have been ready from the outset to go forward in an orderly way to a speedy determination of the issues involved in this controversy, and we submit that the whole matter could have been disposed of weeks if not months ago, if we had been granted the conferences which we asked of the railroad executives, or if this board had taken steps to bring about such conferences.

"The delay has been both disturbing and costly to the general public. It has contributed largely to the uneasiness and uncertainty in all business and in all industry which have prevented that return to normal activity and productivity in which we are all so vitally concerned. It has recruited thousands upon thousands to the army of the unemployed. I, for one, am apprehensive of the economic and political consequences that may ensue when we have a horde of hungry men, women and children in this country."

Referring to the present controversy over wages and hours of work in the packing industry, Mr. Walsh said:

"It means that the packers are backing up the railroad owners and the Morgans and the Garys of the steel industry in a concerted drive to break down all labor organizations and to turn back the clock that has registered all the progress that has been made in the relations between those who work and those who employ them. We are not deceived as to what is transpiring. When it comes to consider wage schedules, the railroad owners will argue that wages of railroad workers should be reduced because the wages of the packing house employees have been lowered and their hours of labor increased. And whatever tribunal is interposed

between the parties to the controversy in the packing industry will be told by the packers that wages in that industry must be reduced because wages of railway workers are about to be reduced. Then, in the next great struggle over the shorter workday they hope to be able to say that the eight-hour day is a failure and to offer as proof of that a return to longer hours in the packing industry.

"That is the vicious circle of which labor complains. That is the way the plan has been set up, and that is the way it will be played through by the financial interests unless they are restrained."

Shippers Demand Part in National

Agreements Controversy

As a representative of the public which pays railway expenses, the National Industrial Traffic League, on March 15, filed a petition of intervention in the case involving national agreements. It charged that many freight rates are now so high that they are destroying business; and that the high rates are chiefly due to excessive pay rolls. It maintained that the Board was created to represent the public as well as the railways and their employees, and that therefore the public has a right to be heard. The Illinois Manufacturers' Association and other state organizations of manufacturers joined with the National Industrial Traffic League in its petition.

After showing that the League is composed of industrial and commercial organizations and representative shipping concerns throughout the United States which pay many millions of dollars in freight, the petition of the League said in part:

"Many of our members find that the increased freight rates are prohibitive and are destroying the business of those who produce and deal in such commodities. It is not possible to increase revenues of the carriers by horizontal increases in freight and passenger rates, as further increases will restrict the volume of business and thus reduce instead of increase the aggregate revenues of the carriers. Therefore, we allege that in order to give the carriers the return provided for in the Transportation Act, there must be a curtailment of operating expenses. We allege that a very substantial part of the necessary reduction in operating expenses may be brought about by the establishment of reasonable rules and working conditions without change in rates of pay, as the present rules and working conditions are unjust and wasteful. The failure to establish just and reasonable rules and working conditions adds to the operating expenses of the carriers which must be paid by our members and others similarly situated."

In defining the reasons for this stand, the League's petition pointed out the increases in the number of men employed and in the pay roll of the classes of employees which now operate under National Agreements, adding, "We believe that these large increases in the number of employees and wages result in large part from the establishment of so-called national agreements and the rules and working conditions now in effect."

The petition also calls upon the Board to request the Interstate Commerce Commission to transmit data pertinent to the determination of whether the present rules and working conditions are just and reasonable, and what would constitute just and reasonable working conditions. The factors on which data could be obtained in this matter, the petition points out, includes

(a) The efficiency with which labor is now being performed on the various railways,

(b) The effect of present rules and working conditions upon the efficiency of labor.

(c) The number of employees and the amount paid by the carriers to such employees by classes for the years 1914 to 1920 inclusive.

(d) The effect of increases in freight rates effective August 26, 1920, upon the volume of freight.

(e) The possibility of increasing revenues of the carriers by further increases in freight and passenger rates.

(f) Facts showing, or tending to show, whether the present rules and working conditions of the various crafts are just and reasonable.

(g) The probable operating expenses and revenues of the carriers for the calendar year 1921.

To the seven relevant factors, outlined in the Transportation Act as a basis upon which the Board should determine the justness and reasonableness of wages, rules and working conditions, the League asks that, in addition, the Board "consider as a 'relevant' factor the ability of the railroad company to pay wages and to maintain rules and working conditions."

"Whatever rules and working conditions," the petition added, "are prescribed by this Board for the various classes of employees affected thereby will materially affect rules and working conditions of similar classes of labor in various industries other than transportation. Therefore, we are vitally interested in having just and reasonable rules and working conditions established on the railroads."

In closing its petition, the League said: "Farmers, manufacturers, merchants and dealers and practically all other industries are now suffering from lessened volume of business and excessive cost of operation, the cost of transportation being not the least important. The highly inflated cost of material, capital and labor existing during the war time period must be brought to reasonable levels at as early a moment as is possible."

When the official report of the Board's proceedings on March 15, at which time Luther M. Walter presented an intervening petition of the National Industrial Traffic League, was completed this portion of the hearing was censored by order of the Board. There is grave doubt, therefore, that the Board will permit presentation of further evidence by a body representing the shipping public. However, this will be decided later by the board in executive session.

Labor Board Again Enters A. B. & A. Controversy

In the opinion of the Board the Atlanta, Birmingham & Atlantic is still within its jurisdiction even though it is in the receiver's hands and the wages of its employees have been reduced by a federal court order. It has accordingly set March 21 as the date for a hearing to determine whether or not either the carrier or its employees have violated the Board's award of last July. The progress of this controversy has been reported in previous issues of the *Railway Age* from the time the carrier issued notice to its employees that their wages would be reduced below the rates fixed by Decision No. 2 to the time that the employees walked out after the federal court had reduced their wages to the rates asked of and denied by the Labor Board.

The Board in calling representatives of both the carrier and its employees to the hearing on March 21, said in part:

"This Board has reason to believe that Decision No. 2 has been violated by the receiver of the Atlanta, Birmingham & Atlantic and by its employees in the following respect, to wit, by the receiver: (1) that effective March 1, 1921, the receiver reduced the wages of track men and other common or unskilled labor determined to be just and reasonable by Decision No. 2, to such wages as may be made necessary by the conditions prevailing in the various communities of the carrier in which it is necessary to employ such common or unskilled labor; (2) by reducing the wages found to be just and reasonable as to other classes of employees to the wages and salaries prevailing on December 31, 1917, plus one-half the increases effective since December 31, 1917; and by the employees in authorizing and directing the cessation of work in concert by the membership of the organiza-

tions involved, on or about March 1, 1921, without reference to this Board of the dispute."

In issuing this order the Board referred in two places to "the legal duty" of the carrier to pay the wages fixed in Decision No. 2 and of the employees to exert every reasonable effort to avoid any interruption to the operation of this carrier. This is the first use of terms of this character by the Board and is taken by many to indicate that the Board intends to establish its legal status by means of this case.

Reports from the territory served by the Atlanta, Birmingham & Atlantic indicate that service on that line is gradually being restored with the aid of new employees.

The presentation of rebuttal statements on behalf of the employees continued during the past week. The first part of these presentations was outlined in the *Railway Age* of March 4 (page 519), and of March 11 (page 550), and they were concluded on March 11.

D. W. Helt Defends Signalmen's Agreement

D. W. Helt, grand president of the Brotherhood of Railroad Signalmen of America, based his arguments in support of the signalmen's national agreement on the responsibility of the signalmen and the absolute necessity, from the point of view of safety of the traveling public, of maintaining this national agreement which he claimed has greatly increased the signalmen's morale. The signalmen's agreement, he said, has made it possible to operate the railroads without serious interruption to traffic through critical periods and it has actually saved the railroads millions of dollars inasmuch as the signalmen have been willing, under it, to accept wages which they felt were below those paid in other and less important industries.

To support the contention that the employees' morale had been increased Mr. Helt cited the fact that they are demanding that the Brotherhood aid them in educating themselves in signal work because "the national agreement has given our men this sense of security; they now feel there is some incentive to increase their skill and efficiency." Regarding Mr. Whiter's contention that the national agreements result in inefficiency, Mr. Helt cited voluminous statistics to show that the percentage of signal failures on various carriers have decreased since the national agreement was placed in effect. He further attempted to prove this point by citing the increases in the efficiency of operation which took place the first six months after federal control. These increases in operating efficiency he maintained were due largely to the increased efficiency of the signalmen.

Regarding the continuation of this efficiency, Mr. Helt said: "The managements, in recently making such drastic reductions of signal forces have sown the seeds of a dangerous decrease in efficiency. In a few months, even in a few weeks possibly, the railroads will be able to show an inefficiency of signals due solely to the drastic reduction in the number of signalmen employed but in no wise due to a drop in efficiency of individual signalmen. Signal forces today are reduced far below the number required to insure proper safety."

Mr. Helt took up the various paragraphs of Mr. Whiter's presentation, basing his rebuttal statement contending that similar rules have been in effect on certain carriers prior to the formation of the national agreement, that these rules were brought about by sharp and evasive practices by the carriers and that their effect is the protection of the workers and bolstering up their morale.

Regarding Mr. Whiter's objection to paying men for work not performed, Mr. Helt said, "It is a function of efficient and economical management to so arrange the work of the employees that they can get their work done without being on duty for an excessive amount of time when they are not doing actual work."

In summarizing his presentation, Mr. Helt outlined the

development of signaling and the increasing intricateness of the apparatus which the signal men are called upon to maintain. He said in part, "The signalmen's national agreement in its salient features must be retained for the safety of the traveling public and the welfare of the railroads as well as the employees. Without the signalmen's agreement, the present railroad problem would not be decreased, but would be tremendously added to."

Maintenance of Way Union

Revives "Conspiracy" Charges

J. C. Smock, grand vice-president of the United Brotherhood of Maintenance of Way Employees and Railway Shop Laborers, devoted the first part of his testimony in support of the maintenance of way agreement to a capital-labor harangue. He contended that in their stand for reasonable working conditions and a living wage, they have to contend not only against the railway managements, but against organized capital. Evidence, he said, that there is a concerted movement on foot in this country on the part of organized capital and employers is found in the clamor that is being made before Congress for amendment to the immigration laws. Furthermore, he charged that thousands of Mexicans, in direct violation of law, have been brought into United States within the past year and placed in direct competition with former employees of the railroads. This has been done, he said, for the purpose of lowering the level of the railway employees to the standard that exists in the country from which they came.

In support of a national agreement, he stated, "an agreement applicable to all railroads establishing a uniform working condition will have a tendency to encourage the employees to become steady workers, thus being an agency in preventing the fluctuation of labor, which is authoritatively considered to be a waste of energy and a genuine loss to the country as a whole."

Regarding Mr. Whiter's statement that representatives of the individual railroad companies are willing to negotiate agreements individually with their employees, Mr. Smock cited instances dating back as far as 1902 to show that the railroad companies have refused to meet the men in conference to arrange schedules of working conditions. The majority of the instances cited took place prior to 1915.

Following this Mr. Smock took up the seven specific objections to the proposed maintenance of way agreement, flatly denying in the majority of cases Mr. Whiter's statements.

Mr. Smock's specific objections to Mr. Whiter's presentation followed in general the objections which have been rendered by the other organizations, namely, that they serve as a protection to the worker thus creating contentment and efficiency, and that without them the carriers would begin indulging again in alleged sharp and evasive practices.

The rebuttal testimony which has been given so far has been more in support of the carriers' contentions than it has been in support of the employees' demands. The fact that this hearing is over the question of national agreements, and that the carriers have definitely stated that they do not oppose agreements between the individual road and its own employees has been largely ignored in the testimony on behalf of these organizations. The major part of the presentations made since March 1 outline the necessity for having agreements as to working conditions, the protection they afford to the workers, their beneficial results in as far as the worker's frame of mind is concerned, etc., but comparatively little has been said to justify making these agreements national in character. It is true that several of the organizations have touched on this point in their summaries, the clerks, for instance, stating that clerical work was the same on all railroads, several of the others stating that the formation of national rules would prevent excessive labor turnover, but

in general, that they have ignored the basis of Mr. Whiter's testimony, i.e., that the national application of rules which do not take into consideration varying local conditions results only in inefficiency and waste.

The presentation on behalf of the International Association of Railroad Supervisors of Mechanics was made by W. V. O'Neil, president. This presentation followed, in general, the preceding presentations.

Mr. O'Neil was followed on the stand by Timothy Healy, president of the International Brotherhood of Stationary Firemen and Oilers, who cited as evidence in support of that organization's demand for continuation of their national agreement many schedules and agreements now in existence between members of the Brotherhood in other industries and their employers. Practically all of these agreements, however, are local either to a district or city. This evidence, Mr. Healy said, proves the "workability" of national agreements.

E. J. Manion, president of the Order of Railroad Telegraphers, in making a rebuttal statement for that organization contended that its only request of the Board was a ruling on time and one-half for Sunday and holiday work. Mr. Whiter, he said, has offered no direct testimony on this matter. His presentation took practically two days and replied in detail to Mr. Whiter's testimony, however, little new material was injected into record.

In response to the suggestion of the Board that those carriers which feel that they are not parties to the present hearings on the national agreements present their reasons therefor several smaller Class I roads have appeared before the Board seeking a release. B. A. Worthington, president of the Cincinnati, Indianapolis and Western, was the first to appear, stating that his carrier wished to withdraw because it did not want to be obligated if an adverse decision is rendered and that it could negotiate its own agreement.

H. T. Brady, Jr., general counsel of the Mississippi Central, likewise held that his road was not properly before the Board because no conferences on subject of working conditions have been held and no dispute has therefore arisen. R. E. Faulkner, general manager of the Mississippi Central, also presented similar testimony. Ben L. Cain, assistant to the president of the American Short Line Railroad Association, testifying on behalf of the Abilene & Southern, the Georgia, Florida & Alabama, the Nevada Northern and the San Diego & Arizona, presented similar arguments on behalf of these carriers.

A Correction

In describing the progress of the controversy between the Missouri & North Arkansas and its employees in the *Railway Age* of March 11 (page 549), C. A. Phelan, general manager was quoted as saying that that carrier would hereafter be operated as an "open shop" road. This statement has since been denied by Mr. Phelan.

Report on Piedmont Collision

THE INTERSTATE COMMERCE COMMISSION has issued a report, dated January 15, 1921, and signed by W. P. Borland, chief of the Bureau of Safety, of its investigation of the disastrous collision on the Chicago, Milwaukee & St. Paul at Piedmont, Mont., on September 30, 1920, when one employee and seven trespassers were killed and one employee and two trespassers were injured. The employee was Engineman Mutz, who was off duty and who had tried to move the standing train in order to avert the collision. Who the trespassers were or how they happened to be killed, is not explained.

This collision was briefly reported in the *Railway Age* of October 8, 1920, page 623, and October 13, page 669.

The collision occurred a few minutes after midnight. East-bound freight Extra 10215, consisting of 50 cars and two electric motors, No. 10215 at the head and No. 10209 about the middle of the train, was standing at or near Piedmont station. Information had just been given by the operator that a runaway was approaching, and efforts were being made to clear the main track, but these were not successful. The collision was the result of 55 cars breaking away from west-bound extra No. 10203 at Vendome, about five miles west of Piedmont. These cars had run from Vendome at high speed, uncontrolled, the grade, descending, being nearly or quite two per cent for more than half the way.

The westbound train (10203) consisted of 96 cars with a helper motor, No. 10227, in the train behind the 34th car, the custom on this grade being to put helping engines at or near the middle of the train. While on the siding at Vendome a coupler was pulled out of the eighth car behind this helper and, very soon after, the 55 cars and caboose ran back down the mountain. Two cabooses and 42 cars were wrecked and a portion of the wreckage was destroyed by fire. The rear brakeman of 10203, who had been ordered to set 10 or 12 hand brakes, was injured in the accident and could not be questioned; but it appears that he had released some of the brakes to facilitate backing the train a short distance to clear the main track for an eastbound passenger train. However, the air brakes appear to have been in such poor condition that it was estimated that the air would not hold the cars more than 15 minutes. The evidence is not very definite and the only conclusion of the report as to cause is that the accident "is believed to have been caused by inoperative or inefficient brake equipment on extra 10203." The conductor and engineman of this train had both been habitually neglectful of rules requiring careful inspection of air brakes, and officers of the division are said to have been lax in their supervision; some of them stated that they did not consider the observance of the strict rules for mountain grades to be necessary at Piedmont, where the brakes of this train ought to have been examined with special care.

Following the investigation, inspectors of the commission arranged to ride on a westbound freight train on the night of October 9. This train, with 100 empty cars was to leave Three Forks, 35 miles east of Piedmont, at 11 p. m. The making up of the train took about two hours and then the air brake inspection took nearly five hours more, and the train did not get away until 5:57 a. m. The first brake-pipe reduction disclosed two cars with short piston travel, three with excessive piston travel, two with air brakes cut out and 18 on which the brakes did not apply. Eleven cars were then set out, but a second test disclosed further defects, and a third one still others. Going up the grade tests were made at ten-minute intervals for the first 55 miles and showed brake-pipe pressure about 9 lb. higher on the motor than on the caboose.

Later and after a helping motor was cut in behind the 35th car and the governor on the motor was set at 80 lb. the other pressures were increased to about 70 lb. Inquiries made by the inspectors showed that air brake rules had been much neglected. The use of cards on cars to indicate that air brakes were cut out, required by the rule, had been habitually neglected. One conductor said that the only time that he had known of a train being delayed on account of an air brake test was when some government inspectors were present. In conclusion the report says:

"It is a matter of surprise that such dangerous practices should have been allowed to continue until finally they resulted in the occurrence of a disastrous accident, causing the loss of many lives. The responsible operating officials of this railway should take prompt and efficient measures to improve air-brake conditions on this line and to insure the strict enforcement of their rules. * * *

Progress Report on the Superpower Survey

Cost of Electrifying Railroads Within the Zone Estimated at \$40,000 Per Mile

WASHINGTON, D. C.

ONE-THIRD OF THE MILEAGE of Class I railroads in the Boston-Washington industrial region apparently can be economically electrified, at a cost of approximately \$800,000,000, which with salvage would be reduced to \$650,000,000, effecting a saving equal to approximately 14 per cent on the investment, says a progress report on the work of the Superpower Survey just submitted to the President by John Barton Payne, Secretary of the Interior.

The Congress, in appropriating for the Geological Survey, June 5, 1920, provided for the survey of power production and distribution in the United States, including the study of methods for the further utilization of water power and the special investigation of the possible economy of fuel, labor, and materials resulting from the use in the Boston-Washington industrial region of a comprehensive system for the generation and distribution of electricity to transportation lines and industries.

An organization was effected under the Geological Survey with offices for the engineering staff in New York City. The engineering staff includes: William S. Murray as chairman; Nathan C. Grover, the chief hydraulic engineer of the United States Geological Survey; Ozni P. Hood, chief mechanical engineer of the Bureau of Mines; Lorin E. Imlay, division engineer for the subjects of power and transmission; Henry W. Butler, division engineer for industries, and Cary T. Hutchinson, division engineer for railroads, with Henry Flood, Jr., engineer-secretary. The engineering staff has been aided by the hearty co-operation of an advisory board of business and professional men, who accepted appointments for this special service. Of this board Prof. Lester P. Breckenridge of Yale is chairman, and the various interests connected with this investigation are represented as follows: Magnus W. Alexander of Boston, representing the National Industrial Conference Board; Edward G. Buckland, vice-president, New York, New Haven & Hartford Railroad; Charles L. Edgar, of the Boston Edison Company, representing the National Electric Light Association; Abraham T. Hardin, vice-president, New York Central Railroad; Herbert Hoover, representing the mining industry; William Kelley, lieutenant colonel, U. S. A.; Elisha Lee, vice-president, Pennsylvania Railroad; Dr. Arthur D. Little of Boston, representing the electro-chemical and by-products industries; James H. McGraw, president, McGraw-Hill Company, Incorporated, representing the technical press; John H. Pardee, of New York, representing the American Electric Railway Association; Henry Cleveland Perkins of Washington, representing the mining industry; and Matthew S. Sloan, of the Brooklyn Edison Company, representing the National Electric Light Association.

The progress thus far made, Secretary Payne says, warrants the belief that the report will be completed by June 30, 1921.

Having in mind the object of the Superpower Survey, viz.: (1) allocation and amount of waste in labor, coal, and other materials, due to the improper form of power generation and distribution within the Boston-Washington zone, and (2) recommendations regarding a regional power system by means of which these wastes may be eliminated, the report naturally divides itself into three divisions: (1) Physical, (2) Legal, and (3) Financial.

With regard to the physical aspect, the investigation has been concerned with the power necessary to (a) railroads, (b) industries, (c) utilities, and (d) a system of centralized

electric generation and transmission to supply their power requirements up to and including 1930.

Railroad Electrification

Regarding railroad electrification, the report says:

We find that there are 20 Class I railways included in the Superpower zone. These are divided as follows:

First track 14,500 miles.

Second track 6,500 miles.

Total trackage (including yards and sidings) 36,000 miles.

There are a total of 10,000 steam locomotives, of which 44 per cent are freight, 29 per cent passenger, and 27 per cent switching.

The total annual railroad coal consumption for 1919 was 19 million tons.

Apparently one-third of this mileage can be economically electrified, including the greater part of double track mileage. Due to lack of traffic density upon the branch lines these can not be profitably electrified.

The above 33 per cent of mileage will carry more than 50 per cent of the traffic and by preferential arrangement of routes probably 60 per cent of the total traffic could be put over this mileage.

Through the electrification of the above mileage a fuel saving of 6,000,000 tons, or \$40,000,000 per annum would be effected. Added to this saving will be \$50,000,000 annually as a difference in favor of electric versus steam engine repairs and maintenance.

The total unit cost of electrification will be approximately \$40,000 per mile of main line track, which with 12,600 miles to be electrified would cost \$500,000,000. In addition, yard and siding trackage would call for \$300,000,000 or a total of \$800,000,000. This sum will cover the necessary construction and equipment for the railways beginning with the electric substations and with the driving wheel of their electric motive power.

The electrification above outlined will displace approximately 7,000 steam locomotives, which at salvage value of \$22,500 each will credit the electrification estimate with approximately \$150,000,000, leaving a net investment of \$650,000,000, which taken in connection with the afore-mentioned savings of \$90,000,000 per annum would return approximately 14 per cent on the investment.

Regarding other phases of the subject, the report says, in part:

There are approximately 50,000 industrial plants in the zone which either purchase or generate power. The Bureau of the Census is at present compiling the statistics of the 1919 Census of Manufacturers. As soon as the tabulations are completed by the Bureau of the Census, we, in conjunction with experts in the various industries, will analyze and ascertain what possible fuel savings could have been made by the Superpower System in 1919. From the data at hand, a saving of between six and eight millions of tons of coal is indicated. In the anthracite coal mines of Pennsylvania, by means of electrification and the supply of superpower, a conservative estimate based on actual tests shows a saving of 6,500,000 gross tons of anthracite. We are at present preparing estimates on the cost of completely electrifying the anthracite mines.

The data required of the Industrial Division will be ready by May 1, for assembly in its final form.

A large saving of coal can be effected through the more efficient generation of power by the new superpower stations. We find that the average rate of coal consumption for present central station output is $2\frac{3}{4}$ pounds per kilowatt-hour. Power can be produced in the superpower system at an average rate of $1\frac{3}{4}$ pounds per kilowatt-hour. The present central station output of coal-generated power within the zone is 8,000,000,000 kilowatt-hours. Therefore, 1 pound saved per kilowatt-hour will conserve 4,000,000 tons of coal annually.

The location of the large superpower stations and their attendant transmission lines is related to the establishment of load centers throughout the superpower zone to which power will be transmitted from them at minimum distance. To date it is indicated that some 20 load centers will be established. By March 1, sufficient data will be at hand to establish these load centers, after which the location of new superpower stations and their interlinking transmission systems can be promptly determined.

The development of power outside of but for transmission

to the zone is being most carefully considered having relation to the St. Lawrence River, other hydroelectric powers and the bituminous coal mines.

A conference with the coal authorities indicates that a fair figure to take for the average price of coal during the period 1919, was \$2.90 per ton at the mine, and that during the period from that date to 1930, \$3.50 per ton.

With regard to water power for the zone, a summation of the possible outputs from the Potomac, Susquehanna, Delaware, St. Lawrence (American rights), Raquette and the Adirondack powers indicate that for an average year there will be available 12,000,000,000 kilowatt-hours, and for a minimum year 8,360,000,000 kilowatt-hours; the plant capacity being 2,300,000 kilowatts to furnish this amount of energy. It is of interest at this point to state that in 1930, the total power requirement in the superpower zone indicated by projected growth curves will be 48,000,000,000 kilowatt-hours, of which amount the superpower system could supply 36,000,000,000 kilowatt-hours. This, therefore, indicates that the water power supply can be but from 20 to 25 per cent of the total.

I am pleased to be able to say that through the unusual co-operation of the public utilities, the railways, and the industries, the completion of the work will be, after May 1, substantially a matter of computation and tabulation.

Concerning legislative and financial status, the following paragraphs represent the general expression of opinion at the Washington meeting of the advisory board February 18.

Needed Legislation

Legislation should take the form of an act permitting the formation of a corporation authorized to take by eminent domain lands or interests therein necessary or appropriate to the construction, maintenance and operation of lines for the transmission of electric energy. Such legislation may be by a separate act or by an amendment to the Federal Power Commission Law.

As a condition precedent to the formation of such a corporation the proposed incorporators should be required to apply to the Federal Power Commission for a certificate that the project is desirable and is justified in the public interest. This application should be followed by a hearing after due notice to the governors of the states through which condemnation rights are asked. If the certificate is granted the incorporators should be permitted to form a corporation with the usual powers and in addition thereto (subject to the approval of the utility commission of the state where the power is to be exercised), the right to construct, maintain and operate power plants and transmission lines, the right to purchase electrical energy from and sell it to electrical power producing and distributing companies. All of these rights should be subject to the exercise by each state of its full police and taxing power.

Financing

The plan of financing which has been suggested is based on the supposition that the superpower system is in its very nature an extension of present power supply systems, whereby, combining several large plants with present relatively small plants, economy in generation and conservation of natural resources can be secured over that at present attained. Therefore, the vested rights of existing public utility power generating and distributing companies should be protected.

Dependence must be placed on the incentive of private initiative to lower costs and on some form of public regulation of prices to the consumer. The power generated and distributed by the superpower system will finally be distributed to the public by means of existing companies and the economies to the public utility companies which will result must ultimately be reflected in prices to the consumer through the action of present state regulating bodies.

The financial plan in bare outline provides for a superpower company with non-par stock as its only class of security. The public utilities within the Boston-Washington zone to be entitled to subscribe for this stock pro rata, based upon capacity demand and load factor. Stock not taken by these customers of the superpower system to be offered to public subscription.

A contract between the superpower company and a local public service company would be a selling contract or a buying contract, while in many cases both buying and selling of current would be involved. These contracts on which the state regulatory bodies would pass to be adjusted from time to time to meet the progress of the art and changing conditions, whether favorable or unfavorable to costs of operation.

Returns upon the stock of the superpower company should be limited by specific provision to a fair division of the benefits derived from its operation between the investing public and the consumers that will make it possible for the superpower company to come into existence, and at the same time be able to serve

the public adequately. New capital is the keystone of the project, but the public demand is its foundation. This division of benefits would be attained by a rule under which the customer companies shall participate equally with the stockholders in any distribution at stated intervals, of net earnings in excess of a specified rate of return, which itself should be more liberal than is commonly contained in the idea of public regulation. Thus efficiency in management would be rewarded and the public interest directly served. To secure the participation of the ultimate consumer in this division of benefits, provision should be made that the superpower stock held by any public service company be regarded as representing an extension to its existing station capacity rather than an outside investment security.

Absolute publicity of the superpower company's operations will be an essential condition. Freedom of action should, however, be also sought for this company in order to promote the free flow of capital to this enterprise whose requirements will be large and continually increasing.

The prime object of the superpower plan is a larger supply of cheaper power. The superpower survey looks to the full utilization of all resources and conservation of the country's fuel can not be attained except with the aid of large capital investment. Neither the nation, by coal conservation, nor the individual consumer, by lower rates, can profit by the project, however sound in its engineering and economic phases, unless the conditions of financing are sufficiently attractive to warrant the use of the country's financial resources.

Employees and Their Compensation Under New Wage Scales

WASHINGTON, D. C.

THE FIRST OFFICIAL STATISTICS showing the effect of the wage award of the Railroad Labor Board of July 20, 1920, on the compensation of railway employees have just been issued by the Interstate Commerce Commission in its quarterly report on employees, service and compensation for the three months ending September 30, 1920, which does not include any back pay retroactively attributable to the months of May and June. The report shows an average number of employees for the quarter of 2,157,989, as compared with 2,004,760 for the second quarter of 1920 and 1,993,524 for the first quarter. The average for July was 2,111,280, for August 2,187,824 and for September 2,164,880. The total compensation for the quarter was \$1,052,109,451, as compared with \$801,063,938 for the second quarter and \$795,616,330 for the first quarter. The increase in the third quarter over the second quarter is about 31 per cent, but there was an increase in the number of employees. As the operating revenues for the third quarter of 1920 were \$1,699,000,000 the payroll represents 61.9 per cent of the revenues. The operating expenses as reported for the same quarter were \$1,691,000,000, of which the payroll represents 62.2 per cent, but the expenses as reported included a considerable amount of back wages. The report gives the total compensation for each class of employees, the compensation per day or hour and the average number of days or hours.

THE TRANSPORTATION CLUB of Flint, Mich., has adopted resolutions declaring that, whereas "the betterment of transportation services requiring purchase of needed equipment and additional facilities, is an important necessity in speeding economic readjustments; and whereas, the present schedule of rates as prescribed in Ex Parte 74 is not producing for the railroads the financial returns contemplated by the act of 1920, thus proving that high rates are of no value unless traffic moves under them; and whereas, the railroads in southern Michigan by reason of excessive rates on sand, gravel, and other road building material, are depriving themselves of millions of dollars in revenue and the respective communities of very badly needed improved highways; be it resolved that the Michigan railroads be urged to give serious consideration to voluntary rate reductions on these commodities in line with the thoughts recently expressed by the Interstate Commerce Commission."

The Lamont Six-Wheel Truck for Freight Cars

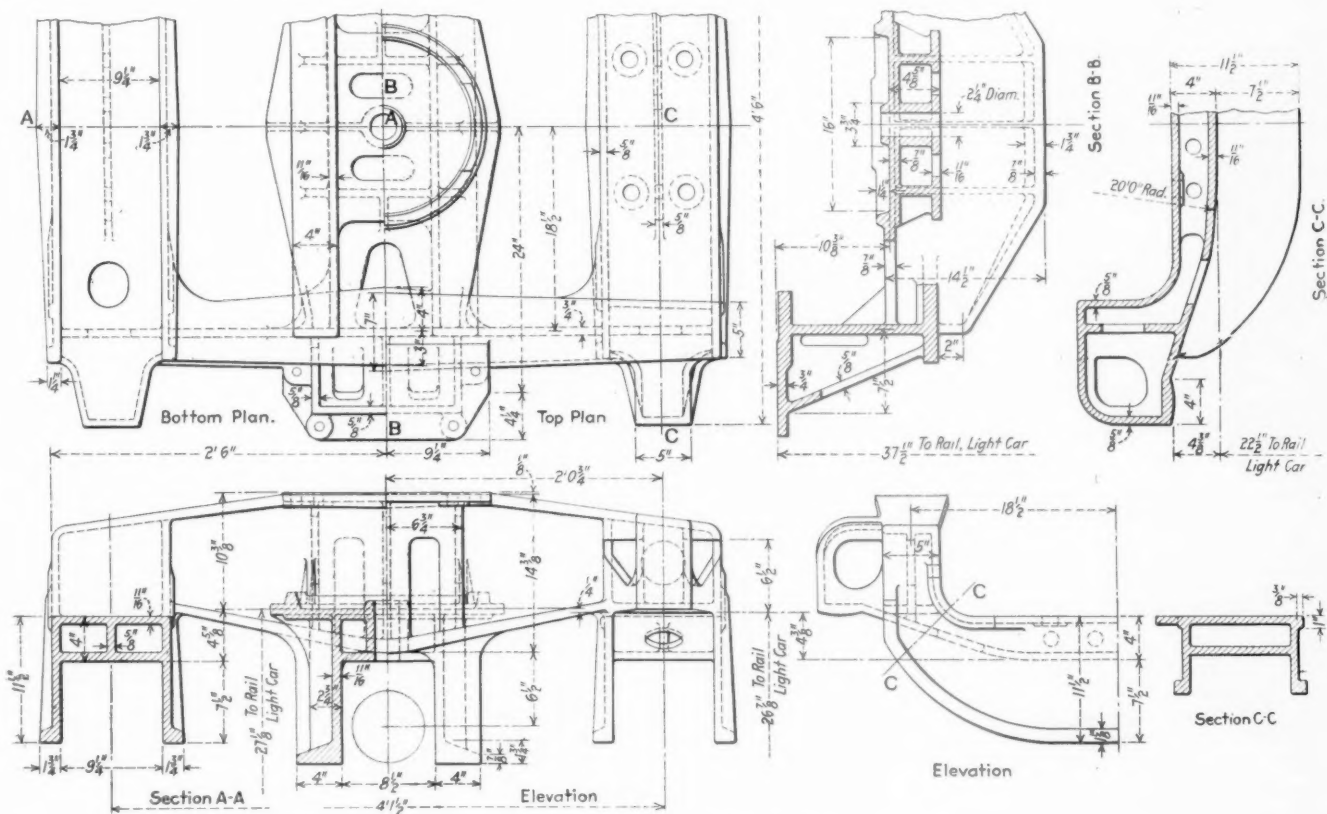
Side Frames Are Continuous Over Three Journals—New Design of Equalizing System Used

A NUMBER OF designs of equalizing six-wheel trucks have been developed for freight cars varying in capacity from 90 tons to 120 tons. The Lamont truck, the most recently developed of this type, has been brought out by the American Steel Foundries, Chicago, and has received its first installation under several of the new 120-ton coal cars built for the Virginian.

This truck differs from other six-wheel trucks for freight cars in bolster construction, the method of equalizing and the arrangement of the springs. The feature of the bolster design is its three-part construction, which provides for

the center of the cross bolster and nominally take one-quarter of the center plate load at each end. The bearing surfaces of these end portions of the equalizing bolster are curved to a radius of 20 ft. This permits a rocking movement of the equalizing bolster on the cross bolsters, and also provides for a limited amount of upward or downward movement of the ends of the cross bolsters as the wheels pass over inequalities in the surface of the track.

Under average track conditions this insures an equal distribution of the center plate load over the four points of delivery to the equalizing system. When a combination of



Details of the Equalizing Bolster

cross equalization of the load distribution to the four points of delivery to the longitudinal equalizing mechanism. The equalizing mechanism permits a symmetrical location of the bolster ends between the wheels, thus making possible a short wheel base and a simple arrangement of the brake rigging. The springs are placed directly over the journal boxes and coil springs are used throughout.

The bolster consists of three parts: two cross bolsters and one equalizing bolster. The ends of the cross bolsters rest on the equalizing levers, and the equalizing bolster, which carries the center plate and truck side bearings, bears at the center of the cross bolsters with a clearance of $\frac{3}{4}$ in. at the side bearings when the car is riding level. The construction of the equalizing bolster is shown in one of the drawings, from which it will be seen that the center plate load is delivered to the side members of the equalizing bolster and through these to end portions which, taken separately, are inverted U-shaped bolsters designed to bear at

vertical movement of the end of a cross bolster and side motion of the car brings a side bearing of the equalizing bolster and cross bolster together, the additional load at this point is distributed through the equalizers on that side of the truck and, if the end of the other cross bolster is free, it may be partially carried back across the truck to the other equalizing system.

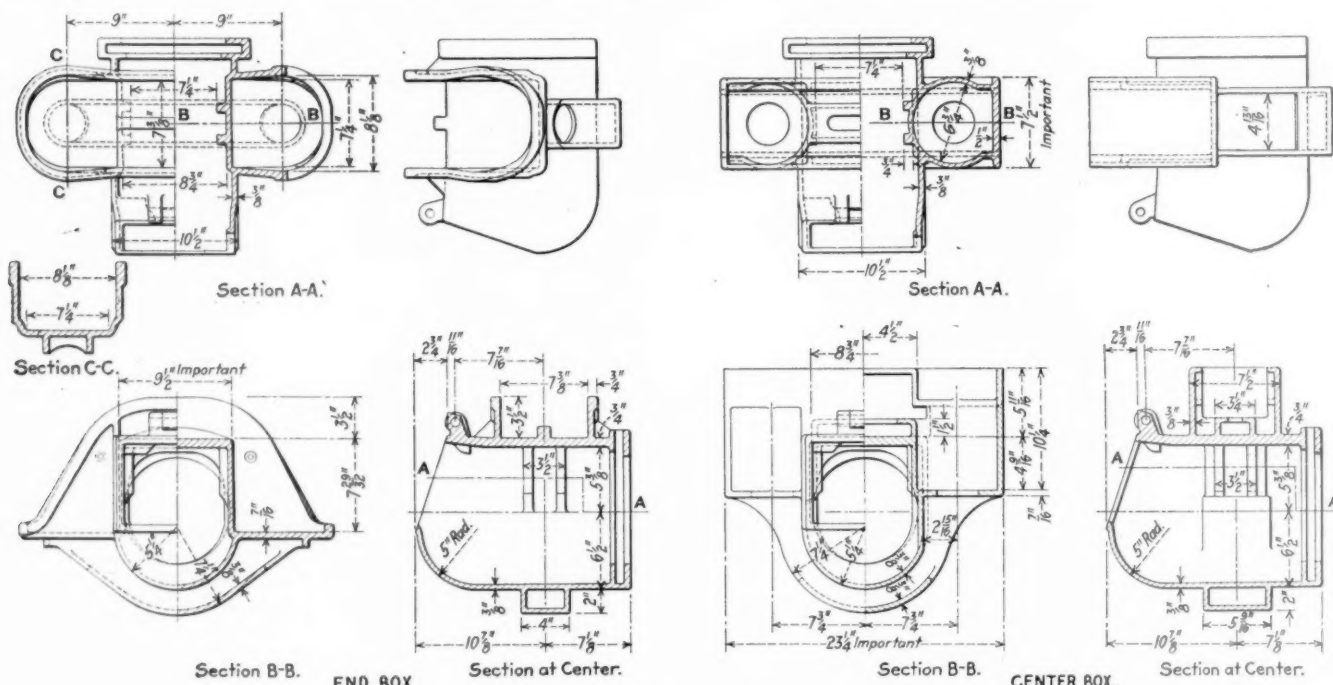
Because of the clearance provided between the side bearings of the equalizing bolster and the cross bolster, very little clearance, if any, is necessary between the car body side bearings and the roller side bearings attached to the equalizing bolster.

The equalizing mechanism on each side of the truck consists of two equalizing levers, two lever hangers and an equalizing beam. The mid point of the equalizing beam bears on the middle of a spring cap which spans the two coil springs of the middle journal box. The location and relationship of the parts are clearly shown in the general

drawing of the truck. The load delivered to either end of an equalizing bolster is taken up by an equalizing lever and delivered in the ratio of two to one, to the end and middle journals, respectively—to the end journal indirectly through

up shocks from the individual wheels without passing them on to the equalizing system.

Double coil springs are used on the end journal boxes and single coils on the middle journal boxes. The inner coils used

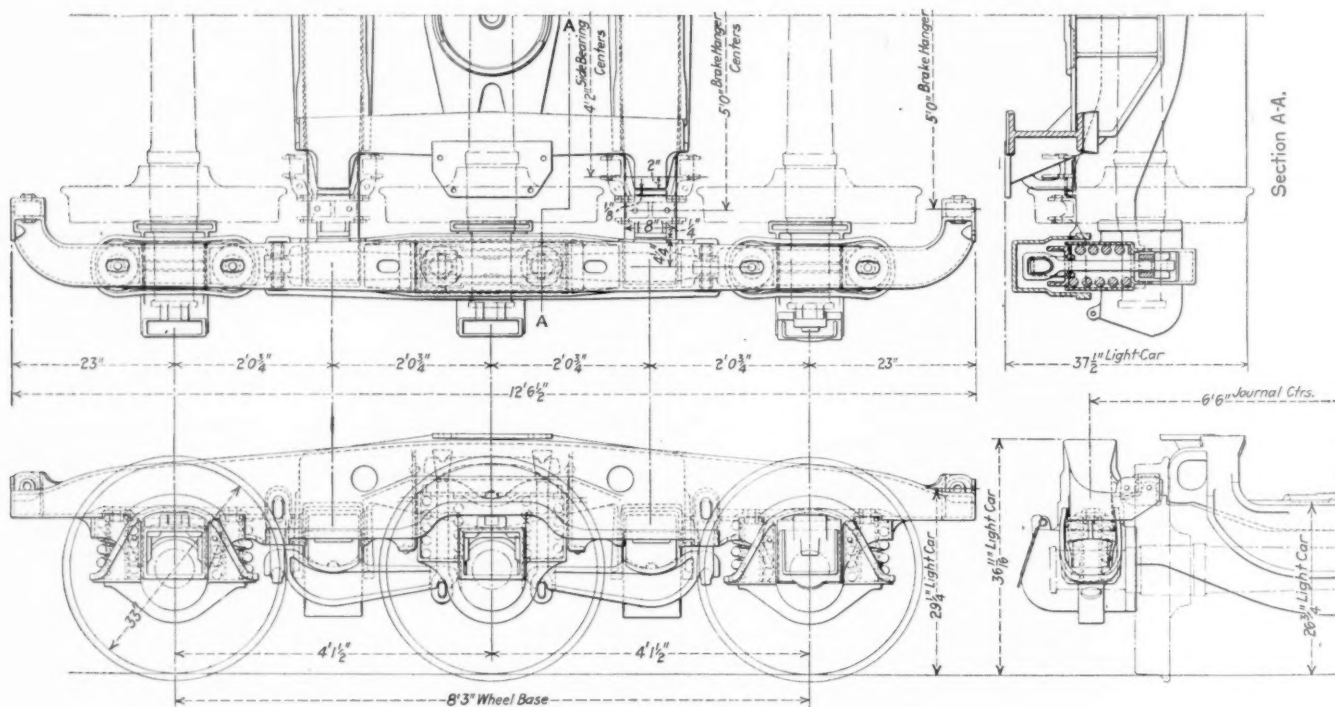


Details of the Journal Boxes

the side frame, springs and journal box and to the middle journal through the lever hanger, equalizing beam, springs and journal box.

The journal boxes are of special design in which pockets

on the end journal boxes have a free height 2 1/4 in. greater than the heavy outside coils. They are compressed to the height of the outer coils under the light weight of the car, and with this compression exert a force on each of the end journals



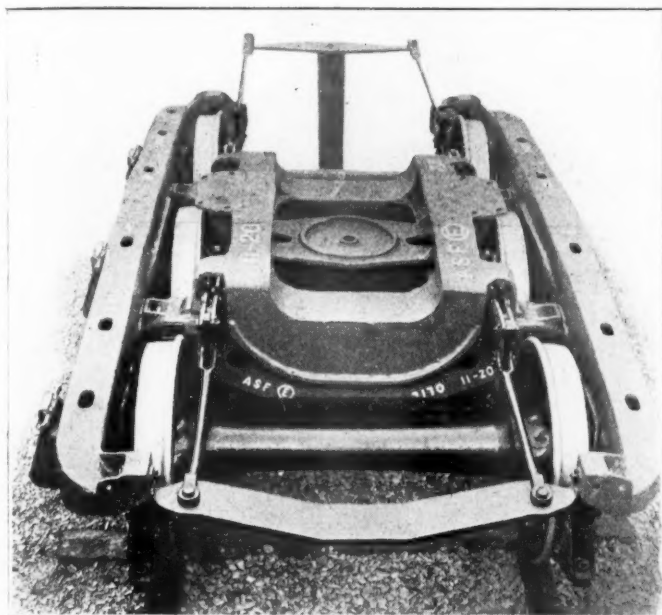
Lamont Six-Wheel Truck for Clasp Brakes

have been provided on either side to receive the coil springs. Thus located, the springs support the maximum amount of dead load, they are protected through the equalizing mechanism against overloads and are in the best position to take

of approximately 1,750 lb. The heavy coils are the same on both the end and middle boxes and are necessarily of high capacity, compressing only about 1/8 in. under the light weight of the car. Because of this comparative lack of

resiliency under the weight of the empty car the inner coils have been provided at the end journals as a protection against possible derailment. The middle wheels being free to act through the flexible equalizing mechanism, do not require the protection of the inner coil springs, and only the heavy coils are used.

The middle journal boxes are guided by the side frames on their ends only. Clearance is provided between the upper portion of the boxes and the side walls of the frames to permit freedom of lateral movement of the middle pair of wheels on curves. When the middle journal boxes move



A Top View of the Truck, Showing Arrangement of Bolsters and Brake Rigging

laterally, an inverted pendulum motion takes place in the equalizing lever hangers, suitable provisions for this movement being made in the bearing surfaces of the hangers, keys and connecting parts.

This truck has a wheel base 8 ft. 3 in., which is the shortest of any six-wheel truck yet developed. This has been an important factor in keeping down the weight of the trucks

which, with the three-part bolster construction and clasp brakes, is 36,300 lb. per car. All parts of the truck are designed to carry a center plate load of 140,000 lb. and a 50 per cent overload on the side bearings without exceeding a fibre stress of 12,000 lb. per sq. in. All surfaces of contact between the journal boxes and the side frames are protected against wear by 3/16-in. hard steel liners. On the end journal boxes these liners are shaped to fit the top and sides of the boxes as well as the vertical flanges. For the middle journal boxes the liners are attached to the frame surfaces.

The truck has been designed for either clasp or single brakes. The trucks furnished for single brakes differ from those designed for the clasp brake rigging only in the shape of the side frames. For the single brake rigging the frames terminate at the outside spring pockets for the end journal boxes.

Freight Car Loading Shows Increase

WASHINGTON, D. C.

THE FREIGHT CAR LOADING reports compiled by the Car Service Division of the American Railway Association for the week ending March 5 indicate that the tide of business depression has turned and railroad freight traffic is beginning to increase after an almost continuous weekly reduction since the latter part of October. The number of cars of revenue freight loaded during the week was 712,822, which is the highest figure recorded this year. It represents an increase of 54,000 cars as compared with the preceding week, but as that included the holiday of February 22 it is more significant that it represents an increase of 17,000 cars over the week of February 19. The loading was considerably less than for the corresponding week of 1920, when it was 811,106, but it was greater than for the corresponding week of 1919 when it was only 675,276. The weekly figures since the first of the year have heretofore generally been lower even than for the corresponding weeks during the depression of 1919.

The loading of grain and grain products was 41,936 cars, which was greater than for any preceding week this year. Most of the gain was shown, however, in the loading of merchandise and miscellaneous freight, the combined total for which was 431,000 cars, or 21,000 more than for any

REVENUE FREIGHT LOADED AND RECEIVED FROM CONNECTIONS

SUMMARY—ALL DISTRICTS; COMPARISON OF TOTALS THIS YEAR, LAST YEAR, TWO YEARS AGO. FOR WEEK ENDED SATURDAY, MARCH 5, 1921

Districts:	Year	Grain and grain products	Live stock	Coal	Coke	Forest products	Ore	Merchandise L.C.L.	Miscellaneous	Total revenue freight loaded			Received from connections		
										This year 1921	Corresponding year 1920	Corresponding year 1919	This year 1921	Corresponding year 1920	Corresponding year 1919
Eastern	1921	6,305	2,617	40,116	893	7,348	681	50,514	58,016	166,490	192,061	159,670	185,169	221,044	177,223
Allegheny	1921	5,861	3,212	47,951	3,516	6,128	2,744	32,387	90,262	142,263	168,226	134,327	100,291	128,420	110,997
Pocahontas	1921	2,386	2,575	44,258	4,722	3,034	1,909	37,682	45,697	24,006	35,540	26,553	12,670	19,672	17,376
.....	1920	2,648	2,704	48,833	3,791	3,872	2,967	39,330	64,081	.....	.....	.....	.....	.....	.....
.....	1919	180	90	14,125	59	1,461	36	2,648	5,407	.....	.....	.....	.....	.....	.....
Southern ..	1921	147	73	21,934	728	1,856	292	168	10,342	114,657	127,421	110,784	61,804	77,535	60,937
.....	1920	4,397	2,188	20,717	600	13,837	872	38,513	33,533	100,992	107,771	101,147	45,011	56,889	44,172
Northwestern	1921	3,470	2,288	24,191	194	17,495	2,799	20,552	56,432	.....	.....	.....	.....	.....	.....
.....	1920	11,554	8,906	5,232	1,272	16,874	1,331	25,901	29,922	.....	.....	.....	.....	.....	.....
Central Western..	1921	8,417	7,209	9,883	1,261	19,468	1,363	20,304	39,866	105,799	118,126	93,684	47,601	71,097	51,698
.....	1920	12,414	10,089	15,227	211	3,222	2,036	20,302	33,298	.....	.....	.....	.....	.....	.....
Southwestern	1921	8,836	10,018	23,057	333	5,907	2,799	24,242	42,934	58,675	61,961	49,105	43,053	54,760	37,701
.....	1920	4,700	1,792	3,761	71	6,440	450	16,508	24,953	.....	.....	.....	.....	.....	.....
Total, all roads...	1921	3,935	2,447	6,423	281	7,239	651	15,989	25,005	712,822	811,106	675,270	495,599	629,417	500,104
.....	1920	41,936	28,257	143,436	7,828	52,216	7,315	201,068	230,826	.....	.....	.....	.....	.....	.....
.....	1919	33,314	27,951	182,272	10,104	61,956	13,615	152,972	328,922	.....	.....	.....	.....	.....	.....
Increase compared	1920	31,090	27,324	139,738	.....	53,369	15,205	48,096	98,096	.....	.....	.....	.....	.....	.....
Decrease compared	1920	8,622	306	.....	.....	9,740	6,300	.....	98,096	.....	.....	.....	.....	.....	.....
Increase compared	1919	10,846	933	3,698	.....	7,828	.....	201,068	37,612	.....	.....	.....	133,818	.....	.....
Decrease compared	1919	.....	.....	.....	.....	1,153	7,890	.....	177,718	.....	.....	.....	4,505	.....	.....

L.C.L. merchandise loading figures for 1921 and 1920 are not comparable as some roads are not able to separate their L.C.L. freight and miscellaneous of 1920. Add merchandise and miscellaneous columns to get a fair comparison.

February 26	1921	41,218	26,885	142,226	8,109	51,257	7,196	173,678	207,653	658,222	783,295	666,708	448,343	608,476	674,634
February 19	1921	36,059	27,892	146,438	8,735	54,417	11,702	187,064	223,199	695,506	772,102	700,913	471,877	579,452	540,123
February 12	1921	32,879	27,456	151,786	9,026	53,882	8,094	184,892	213,612	681,627	786,633	687,128	488,983	610,331	537,109
February 5	1921	36,875	31,277	155,917	10,381	54,066	8,501	182,221	217,759	696,997	762,680	692,614	495,860	599,454	551,312

previous week this year. This indicates an increase in manufacturing activity.

In spite of the increased loading, the number of surplus freight cars for the week ending March 8 showed an increase over the previous week. The total was 422,207. For the week ending March 1 the number was 413,450, but this represented a decrease of 10,000 as compared with the week ending February 23, which thus far represents the peak since the car shortage gave way to a surplus last fall. For the week ending March 8 there was a surplus of 191,012 coal cars and 164,005 box cars.

The semi-monthly summary of general car conditions issued by the Car Service Division as of March 11 says that the demand for grain cars is increasing in the west. The refrigerator car supply is said to be adequate in all sections, but there seems to be some tightening up. The railroads are asked to give special attention to the repair of refrigerator cars, as undoubtedly the demand will be quite active in the near future. There has been no noticeable increase in the demand for open top cars during the past few weeks but within a few weeks the usual spring demand for open top cars to transport road and building construction material will be upon us.

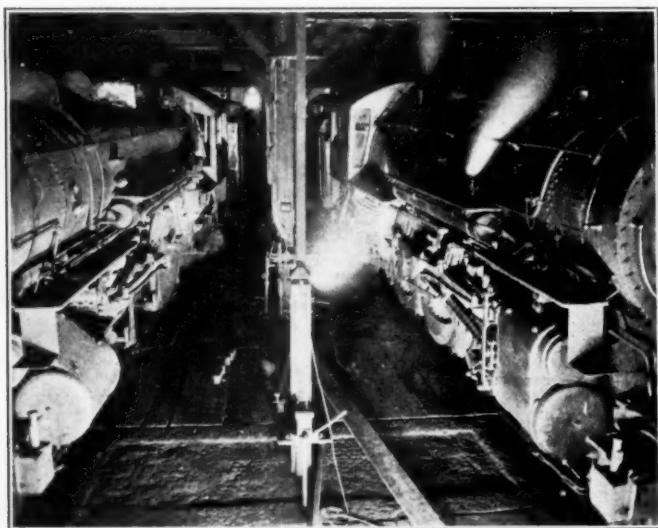
Flood Lights With Crossed Beams for Engine House Lighting

By F. B. Freeman

Chief Engineer, Boston & Albany

THE ENGINEERING DEPARTMENT of the Boston & Albany has been working for some time on the possibilities of a more economical and efficient lighting system for engine houses, old methods proving so unsatisfactory and costly. It believes that it has now developed a system which is a distinct advance.

The new system consists of abolishing the old high over-



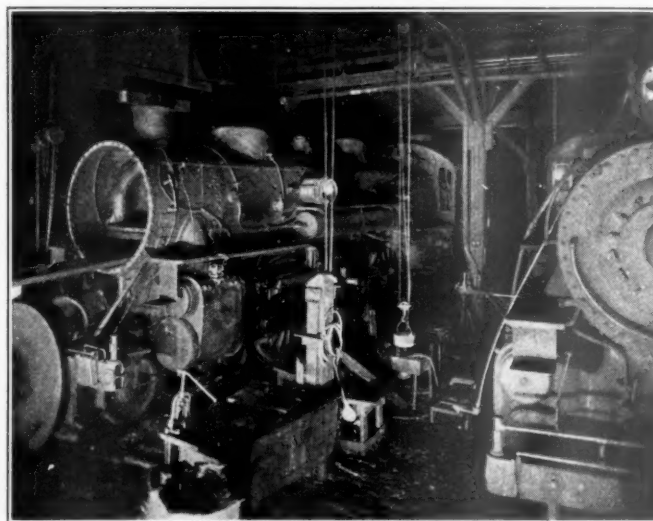
The Crossed Beams Provide Light on the Sides of the Locomotives in the Stalls

head lighting and wiring and substituting therefor two flood lights to each stall, placed on the rear wall of the house, ten feet above the floor surface and seven and one-half feet each side of the center line of the pit tracks. The conduit for carrying the wires is run on the outside of the house under the eaves, and branches run down outside to the location of the flood lights and then through the wall. This

removes the conduits and wires out of the hot gases in the engine house which were found very destructive to interior wiring.

The flood lights adopted are of the Davis type, the case being all of heavy cast iron and the reflector of silvered glass with a plain glass front.

One of the greatest troubles with the old form of lighting was the rapid accumulation of a black coating on the exposed lamp due to the damp, dirty atmosphere and the heat generated in the lamp itself. This rapidly lowered the amount of light emitted and due to the height above the floor cleaning of the lamps was much neglected. The lamps being so high



The Angle of the Light on the Back Wall Is Great Enough to Furnish Light for an Open Front End

up the rising steam and vapor which hung against the roof also diminished the amount of light. With the new arrangement the lamp is not exposed to the damp atmosphere and so cannot get a deposit of dust on it. The plain glass front on the flood light being only ten feet from the floor is easy gotten at with a hand ladder and can be readily kept clean. The lamps used in the flood lights are 1-100-watt type C Mazda as against the 400-watt lamps which were found necessary with the old overhead arrangement, so that the saving in current is considerable. It is also found that the new lights being so low the steam accumulating in the house is usually above the line of lights.

It was thought at first that trouble might be experienced with men running engines into the house due to the glare but this has not developed. The beams of light from the two flood lights crossing each other break up glare and diffuse the light very satisfactorily over the stall and light up all the moving parts of the engine very well indeed. The first installation was made in the Beacon Park house, Boston, and it has proved so satisfactory to everybody that all the houses on the road are now being equipped with the new system as rapidly as possible.

COMMENDED FOR SAVING THREE SECONDS.—Quick action on the part of Flagman M. H. Allred prevented a probable loss of life at Asheboro, N. C., recently, when a party in a large automobile started across the tracks in front of train No. 141, which was backing into the station. The motor of the automobile stopped when the automobile was on the track. Flagman Allred immediately applied air and brought the train to a stop within two feet of the stalled machine. Superintendent J. W. Fletcher has commended Mr. Allred for his presence of mind.—*Southern Railway Bulletin*.

General News Department

The **Official Guide** has resumed the publication of its quarterly supplement entitled "The Official List of Interline Ticket Agents and Passenger Traffic Officers" of the United States, Canada and Mexico. The February issue is No. 1, Volume 6.

The **Western Railway Club** will meet at the Sherman House, Chicago, on March 21. J. E. Gardner, electrical engineer, Chicago, Burlington & Quincy, will read a paper entitled "Electrical Development and Standards in the Power and Lighting Field."

At the annual meeting of the Chamber of Commerce of the United States at Atlantic City on April 27 to 29 the Transportation Group will consider a report by the chamber's railroad committee, the present financial situation of the railroads in relation to plans for consolidation, and the shippers' part in rate-making.

The **Interstate Commerce Commission** and the **Railroad Labor Board** will hold a joint hearing at Washington on March 30 for the purpose of hearing objections or amendments to a proposed plan for revising the rules for reporting information to the commission regarding the work and compensation of employees.

President Harding is understood to be planning a trip to Alaska this summer to make a personal study of conditions, including the Alaska government railroad. A plan has been under consideration for completing the railroad as rapidly as possible and for the operation by the government of a steamship line between Alaska and various ports on the Pacific Coast.

Senator La Follette's speech in the Senate on February 21 and 22 in opposition to the passage of the Winslow bill has just been published in the Congressional Record, and, with the appendices, takes 64 pages, mainly in small type. The appendices consist largely of charts showing interlocking directorates and various statements presented by the labor leaders to the Railroad Labor Board at Chicago in connection with their charges that railroads have paid extravagant prices for car and locomotive repairs in outside shops.

Inspection of Railway Stationary Boilers in Canada

The Board of Railway Commissioners for Canada has ordered that the railway companies subject to its jurisdiction put in force not later than June 1, 1921, regulations promulgated by the board for the inspection of railway steam boilers other than locomotive boilers. The orders cover the design and construction of the boiler and appurtenances and provide for periodical inspection.

Wrong Use of \$28,000

The Interstate Commerce Commission has issued a notice quoting a letter which it has received from the auditor of a railroad which is less than 120 miles in length and which operates one train on alternate days, stating that the company had paid out \$28,935 in attorney's fees in connection with the collection of its claim under Section 204 of the transportation act. The letter stated that this amount, if taken into the operating expense for 1921, would seriously distort them; and permission was asked to put the item in profit and loss account. The commission says in its notice that there was nothing about this application for reimbursement which could not have been adjusted by correspondence. Applications under Section 204 and 209 of the transportation

act ordinarily require nothing on the part of the applicant except compliance with the commission's request for information.

Fuel Conservation Campaign Shows Results

A saving of 15,875 net tons of coal in December, 1920, over the same month in 1919 in freight service was effected by the Philadelphia & Reading through its fuel conservation campaign. In December, 1920, the consumption of coal per 1,000 gross ton miles of freight was 254.6 lb., a reduction of 9 per cent as compared with December, 1919, when the consumption was 280 lb. per 1,000 gross ton miles.

Preliminary Returns Show Deficit for January

Preliminary compilations of railway returns to the Interstate Commerce Commission for the month of January reveal a situation even worse than that in December. One hundred and sixty-six Class I roads, operating 200,000 miles of line, show a deficit of \$1,289,291 for the month. The same roads in January, 1920, had a net operating income of \$52,971,220. Total operating revenues show a reduction of 5.8 per cent, while total operating expenses increased 6.9 per cent. Freight revenues of the 166 roads increased 4.6 per cent and the passenger revenues increased 15.7 per cent as compared with January, 1920. The fact that total revenues show a decrease is probably attributable to the fact that in January last year an estimate of \$500,000,000 for back mail pay was taken into the accounts. These figures do not take into account lap-over items growing out of settlements with the Railroad Administration.

Discipline and the Golden Rule

Discipline in the railroad business is as essential as it is in the army. We are responsible for the lives of our fellow men. Discipline may not always be easy to apply. It may seem easier to follow the lines of least resistance and let little things go, than to apply firm, impartial discipline, but in this we deceive ourselves. When we follow the "let alone" policy we make it harder in the end. Just discipline is a necessity, and to apply it, the officer charged with the responsibility must study conditions thoroughly and his conclusions must be based upon understanding, reason and justice. The Golden Rule is the best basis for discipline: that means treating the other man as you yourself would like to be treated. It is always good policy when discipline is necessary to take some time to think it over. Sleep on it. Be sure you are right and then go ahead. Frequently we find that the merits or demerits of a case present themselves in a different light after we have had an opportunity to reflect on them. If an employee is permitted to continue doing the things he should not do and is not disciplined, he becomes careless and irresponsible, a result that reflects not only upon himself, but upon his superior officer.—E. E. Nash, Minneapolis & St. Louis.

Railway Fire Protection Association

W. F. Hickey, New Haven, Conn., president of the Railway Fire Protection Association, has issued "News Letter No. 2," dated March 10. The executive committee of the Association has appointed seven committees to prepare reports for the next annual meeting on the following subjects, the chairman of the committee being named after each subject: Protection of Shop Plants, J. R. Peters (Penn.); Statistics, G. R. Hurd (I. C.); Locomotive Hazards, E. M. Floyd (C. C. C. & St. L.); Telephone and Telegraph Hazards, E. Richards (S. P.); Coaling Plants, W. E. Cathcart (Penn.); Hand Book on Merchandise in Transit, E. B. Berry (South-

ern); Gasoline and Electric Motor Trucks in Freight Houses, E. J. Reilly (Erie).

The executive committee proposes that a half day be given at the meeting to a "question box" for the purpose of discussing inspectors' problems.

The Pacific Coast sectional meeting of the association, which will be in charge of W. S. Wollner (N. W. P.), will be held in San Francisco on June 16 or 17.

No Exhibits at June Conventions

The Railway Supply Manufacturers' Association at a meeting of its executive committee at Pittsburgh, Pa., as briefly noted in last week's issue, voted against having an exhibit at the convention of the American Railway Association, Division V—Mechanical—in June.

Further details relative to this decision are given in a letter sent to members of the association, dated March 10 and signed by J. D. Conway, secretary, and J. F. Schurch, president. The letter follows:

After a thorough canvass and study of the entire situation, both among the manufacturers composing this organization and the railroad executives, your executive committee has unanimously decided it the part of wisdom and good business judgment to postpone the June, 1921, R. S. M. A. exhibit at Atlantic City for the following reasons:

1. We are all familiar with the present depression in railroad and general business and the attendant desire and demand to curtail expenditures in every possible direction to strengthen the existing financial situation with the prime motive of developing greater economy and efficiency in operation.
2. In the opinion of men of mature judgment in the manufacturing as well as the railroad fields we are confronted today with the serious situation of not knowing with any degree of certainty as to just when business conditions will improve. Many manufacturing concerns engaged in the production of railroad devices and specialties are either shut down or running at an unusually low rate of operation.

While we realize this action is drastic, we feel that present conditions demand it. We are confident, however, that it will meet with the full approval of the business interests of the country, and we further believe that the future will warrant our resuming plans at a later date for the 1922 exhibit as in former years.

The executive committee also decided that it would not be necessary, in view of the cancellation of the exhibit and the annual meeting, to send representatives to such meetings of the Railroad, Mechanical and Purchases and Stores divisions, A. R. A., as may be held. The wisdom of cancelling hotel reservations was also suggested.

Proposed Senatorial Investigation of Railroad Situation

WASHINGTON, D. C.

Senator Cummins is actively engaged in preparing for the proposed general investigation of railroad conditions, for which he will introduce a resolution at the opening of the special session of Congress on April 11, and is gathering a large amount of data. He has been conferring for some time with members of the Interstate Commerce Commission and others on the subject and Thomas DeWitt Cuyler, chairman, and Alfred P. Thom, counsel, for the Association of Railway Executives, have conferred with him, assuring him that the railroads welcome this opportunity for a thorough airing of the situation. Senator Cummins has denied public statements which have indicated that one object of his proposed investigation is to consider the desirability of the government taking over the railroads and has made it clear that he is opposed to government ownership. He has also indicated that one of the primary purposes is to give an opportunity for making public some of the facts about the railroad situation which he has learned but which are not generally understood. It is reported that S. Davies Warfield, president of the National Association of Owners of Railroad Securities, is planning to lay before the committee a plan to carry out an idea which Senator Cummins has advocated for bringing about a greater centralization of railroad purchases. It is also understood that a strong effort will be made by the railroad labor organizations affiliated with the American Federation of Labor to take this occasion for strongly urging legislation to prevent the Railroad Labor Board from acting on the reductions in wages which the railroads have proposed by establishing some substitute organization along the lines of their boards of adjustment which they have heretofore advocated.

Traffic News

Charles J. Sprague, for the last six years freight claim investigator for the New York Central, with headquarters at Buffalo, N. Y., has been appointed traffic manager for O. H. Willson at Lockport, N. Y.

The Interstate Commerce Commission has reopened the railway mail pay case to allow of consideration of the recent petition of the New England roads for a further increase in their rates for the transportation of mail and a readjustment for the period since September 11, 1920.

The Mallory Steamship Line announces that, beginning April 9, freight rates will be made from New York through to Birmingham, Ala., in connection with the barge lines on the Warrior River, and that the first-class rate will be \$1.75. This is 43 cents less than the all-rail rate from New York to Birmingham.

The Interstate Commerce Commission on March 3 vacated, as of March 6, its Service Order No. 17, which was issued on September 16, 1920, restricting the supply of cars to coal mines which are unable to load open-top cars within 24 hours. The Commission says the emergency which caused the issuance of the order has in general been measurably relieved.

The Transportation Club of Peoria, at its annual meeting on February 25, elected the following officers: President, H. D. Page; vice-presidents, G. I. Sweney and N. M. Love; secretary-treasurer, O. B. Eddy; directors, E. F. Stock, A. T. McMaster, E. E. Kester, G. H. McHugh, O. T. Arnold, W. J. Gorman, S. M. Russell, W. D. Upton, R. I. Colvin, A. H. Harwood.

The American Railway Express Company reports that from December, 1919, to November, 1920, 1,858,130 claims for loss and damage were filed against the company. The Express Company is conducting a "Right Way" campaign and is calling special attention to the importance of packing shipments properly so that unnecessary wastage in transit can be avoided.

The Pennsylvania has begun loading the lake coal boats tied up for the winter at Cleveland, Erie, Ashtabula and Sandusky, and expects to enable the boats to move cargoes aggregating about 200,000 tons as soon as the lake is open. Of the 28,000,000 tons of coal delivered by the railroads at the lake ports during the shipping season the Pennsylvania carries approximately 20 per cent.

The Spokane Transportation Club, at its tenth annual banquet held in the club rooms on February 18, elected the following officers: President, W. H. Ude, general agent, Northern Pacific; first vice-president, A. S. Cobb, manager wholesale department, Sherman Clay Music Company; second vice-president, T. W. Emerson, manager, Emerson Fuel Company; secretary-treasurer, George A. King, assistant general freight and passenger agent, Spokane International.

The production of soft coal, which had been declining steadily since mid-December, recovered slightly during the first week of March, according to the weekly bulletin of the Geological Survey, but whether the recovery was due to unfilled orders carried over from the week of Washington's birthday or whether this signifies that the bottom of the present depression has been reached cannot yet be stated, the bulletin says. The total output is estimated at 7,406,000 tons.

The Stark County Traffic Club was organized at Canton, Ohio, on February 28 and the following officers were elected: President, A. J. Burns, traffic manager, the Bonnot Company, Canton; vice-president, C. H. McCowen, traffic manager, Transue-Williams Steel Forging Corporation, Alliance; secretary, M. L. Underwood, traffic manager, Buckeye Cereal Company, Massillon; treasurer, B. T. Braucher, traffic manager, the Hoover Suction Sweeper Company, Canton. The Board of Governors consists

of D. J. Morris (W. & L. E.), W. A. Bell, A. O. Ellis (W. & L. E.), T. B. Ray and J. B. Mertes (W. & L. E.).

The "Shippers' Conference Committee of Greater New York," at its annual meeting, held in the Woolworth Building on March 3, elected as chairman for the ensuing year W. J. L. Banham of the Otis Elevator Company; P. W. Moore, Queensboro Chamber of Commerce, is secretary. This association, organized a year ago, now has 196 members. In connection with the annual meeting there was shown a motion picture illustrating right and wrong ways of handling freight. This picture, provided by the American Railway Express Company, is entitled "The Lost Millions." A report was received from a committee dealing with proposals to revise charges for cartage of export freight in the neighborhood of New York City.

A readjustment of rates on lumber from the Pacific northwest to eastern points was arranged for at a conference of traffic officials of the transcontinental lines with the Interstate Commerce Commission on March 16 under which the rates via Omaha will be equalized with those via St. Paul. The Omaha rate of 73½ cents will be reduced to the St. Paul rate of 66½ cents, which will also be applied to the lower river crossings with the usual differentials. The effect will be to reduce the Chicago rate from 80 to 73 cents. It is stated that the reduction will give a considerable degree of relief to the western lumber shippers. The commission authorized the new rates being made effective on five days' notice.

Virginia Apples

The total movement of Virginia-grown apples from stations on the Harrisonburg-Manassas branch of the Southern Railway during the 1920 season amounted to 221,560 barrels, or about 1,390 carloads, distributed as follows: To eastern cities, 67,167 barrels; to Virginia and West Virginia, 48,112 barrels; to Ohio and Mississippi River crossings, 7,098 barrels; to southeastern and Carolina cities, 33,482 barrels; export, 33,482 barrels; to Charlottesville, Broadway, Winchester and Front Royal, for cold storage, 31,737 barrels. Total, 221,560 barrels.

Abuse of the Order-Bill Form

The National Industrial Traffic League has sent out the following circular in its campaign against the misuse of the order bill of lading and also to limit its use:

The use of the order bill of lading covering carloads should be confined to those shipments where the consignee is required to pay for the goods before obtaining them from the carriers, or expressed in a different way, where goods are sold sight or arrival draft with bill of lading attached. Some shippers use the order bill of lading for the purpose of retaining control of the goods until they are ready for delivery to the consignee or to the notify party. Again shippers will consign goods to their own order at destination and endorse the bill of lading to a consignee who fails to notify the carrier, that upon the arrival the car should be delivered to him; such cars are unnecessarily delayed at destination.

If a shipper desires to retain title to the goods it is not necessary for him to consign them to his order, but merely to consign them to himself in care of the consignee to whom he wishes them delivered. If, for any reason, he does not wish to show the consignee in the bill of lading, he should merely consign the goods to himself and promptly notify the consignee how the car is billed and send him the bill of lading.

The practice of consigning goods to order, even where there is no banking transaction, is an old one and a great many shippers are following the custom which has prevailed for years without knowing why, or having any good reason for doing so. In many cases, the shipping clerk is merely following precedent without knowing why. This practice should be discontinued and shipments should be consigned to the order of the shipper only in cases where it is the intention to use the bill of lading as collateral or for collection purposes.

The carriers should be assisted by the shippers in getting rid of improper practices, particularly where such assistance will not only result in less car delay, but in better service to the shippers, and league members are urged to look into this matter and endeavor not only to regulate their own shipping in the respect suggested, but to use their influence whenever they can to induce non-members to discontinue the use of the order bill of lading except in those cases where it is to be used as the basis of a banking transaction, for it must be obvious that any unnecessary delay in the delivery cars should be avoided in the interest of better service as well as car supply.

Member-roads of the Association of Railway Executives, working in co-operation with the League, have been instructed to send to the office of the chairman concrete examples of the misuse of such orders and to advise as to whether there has been any such misuse upon their lines.

The campaign against the misuse of the order bill of lading was started by the National Association of Credit Men, who brought the subject to the attention of the League.

Commission and Court News

Interstate Commerce Commission

The commission has suspended until July 14 certain proposed cancellations of rates on grain c. l., from points on the Chicago, Burlington & Quincy in Colorado, Idaho, New Mexico, Utah and Wyoming to Texas and Louisiana Gulf ports when routed via Denver and the Colorado & Southern.

The commission has reopened the Indiana intrastate rate case for further consideration of rates on coal applicable to intrastate shipments in Indiana for distances of less than 30 miles, including their relation to rates for distances of 30 miles and more, and their relation to interstate rates. The commission's order in this case did not apply to intrastate coal rates for distances of less than 30 miles, but it appears that the rates as now in force complicate the relations between mine groups in which some of the mines are a little more than 30 miles from the markets.

Personnel of Commissions

The usual change in the chairmanship of the Interstate Commerce Commission will not take place in March this year, but at the end of June. When Commissioner Clark was elected chairman of the commission a year ago the commission adopted a change in its practice by which Chairman Clark will serve for the balance of the fiscal year ending June 30 and the chairman will hereafter be elected for the fiscal year. This makes the change come at what is ordinarily the dull season of the year rather than at a period of greatest activity.

A New Commission in New Jersey

Governor Edwards, of New Jersey, has appointed a new public utilities commission, the court having sustained the governor in his action in dismissing the former commissioners last October. Acting under a new law, passed by the legislature—vetoed by the governor and then passed over the veto—the governor has appointed the following three: Joseph A. Hammill, of Hudson County, former Assemblyman and Congressman for twelve years; Joseph S. Hoff, of Mercer County, former Civil Service Commissioner; and Harry Bachrach, of Atlantic City, twice Mayor of Atlantic City. Two of the men named are Democrats and the other a Republican. The term of Commissioner Hammill will be for six years, Commissioner Hoff for four years and Commissioner Bachrach for two years.

State Commissions

Twenty-four Station Agencies Cut Out

New Hampshire Public Service Commission has authorized the Boston & Maine to discontinue twenty-four station agencies. The commission's report says:

"This move on the part of the railroad is in the interest of economy. The company finds its financial condition such that it is only by the strictest economy that it can continue serving the public. After paying operating expenses and fixed charges, including interest and rental of leased lines, the following deficits are shown:

September, 1920	\$588,520
October, 1920	1,082,704
November, 1920	1,773,031
Total	\$3,444,255

"In all cases under consideration the company proposes to place a caretaker in charge of the stations. No tickets will be sold and no freight billed out. Passengers must pay their

fare to the conductors after boarding the train and have the baggage master on the train check their baggage. So far as the passengers are concerned, the inconvenience will not be great.

"In regard to freight, however, the inconvenience is considerable. Nothing but prepaid freight will be carried to these stations. In the case of l. c. l. freight, it will be at owner's risk after delivery on the platform or in the warehouse, which will be unlocked. There will be no one representing the railroad to take charge of the freight upon its arrival. If a shipper wishes a car set he must arrange for it at the nearest station from two to four miles away."

Court News

Not Liable for Death of Wrecking Foreman

The Texas Court of Civil Appeals holds that a railroad furnishing a wrecking crew with chains of various and ample strength is not liable under the federal Employers' Liability Act for the death of an experienced foreman due to the breaking of a chain of insufficient strength selected by him to raise a wrecked car.—*Roberg v. Houston & Texas Central* (Tex.), 220 S. W. 790.

Flowers of Rhetoric, Director-General

Hines and Georgia Justice

In affirming a verdict for the defendant in a personal injury case by a passenger against a railroad, the Georgia Court of Appeals, dealing with the complaint of strong language used by the trial court in cautioning the jury to do "exact justice between the lady on one side and the defendant on the other," approved the trial judge's opinion in overruling a motion for a new trial, in which he said: "Reference to the evidence shows that the case was between a lady with a sprained ankle and a soulless corporation that sees as much beauty in a crowbar as in a pretty foot. The case afforded a field where the flowers of rhetoric grew wild. The plaintiff not only had a sprained ankle with all of its horrors, but she 'couldn't get a cook last summer, and had neighbors to come in and see about the children.' Doubtless the plaintiff suffered very much from not having a cook in Savannah in the summer, but that suffering, bodily or mental, could hardly be ascribed to Mr. Hines, the Director General of Railroads. Seriously, cases should be tried under the rules of law and evidence and without appeals to prejudice. No higher duty rests upon a judge than to see that a recovery is based on exact justice."—*Green v. Hines* (Ga.), 102 S. E. 899.

United States Supreme Court

Freight Rates for Government Property

The Supreme Court of the United States has affirmed the decisions of the Court of Claims holding that the Oregon-Washington Railroad & Navigation Company and the Western Pacific are not entitled to recover the difference between the amounts paid the roads by the government for the transportation of the effects of army officers changing stations—being the rates for such transportation over land-grant roads fixed in the land-grant equalization agreements—and the usual commercial rates. Under these agreements such freight was accepted by the carriers without prepayment of the charges therefor upon the basis of the commercial or tariff rates with appropriate deductions on account of land-grant distance as provided in the Railroad Land-grant Act. The court bases its decision upon the railroad's non-action during a long course of years notwithstanding an explicit and contrary assertion by the government of the validity of the lower rate. It was also pointed out that section 22 of the Interstate Commerce Act permits reduced rates to the United States and that by conference ruling of the Interstate Commerce Commission No. 33 of February 3, 1908, section 22 is made applicable to property transported for the United States.—*Oregon-Washington RR. & Nav. Co. v. United States*; *Western Pacific v. United States*. Decided March 7, 1921. Opinions by Justice McKenna.

Foreign Railway News

Car Exports in January

The exports of passenger cars in January were more than twice as heavy as during any month in 1920. The total was 64, valued at \$520,293, and the largest shipments were to Cuba. The exports of freight cars—1,452, valued at \$2,535,887—mark a considerable decline from December's totals. By far the largest shipments of these cars, too, were destined for Cuba. The totals by countries as compiled by the Bureau of Foreign and Domestic Commerce follow:

Countries	Passenger		Freight and other		Parts of cars, Dollars
	Number	Dollars	Number	Dollars	
Belgium	375
France	5,105
Greece	145
Italy	133
Norway	2,505
Spain	30,325
England	796
Canada	15	36,731	85,631
Costa Rica	575
Guatemala	2,824
Honduras	14	14,630	169
Nicaragua	14	17,355	..
Panama	7,488
Mexico	21	34,500	208	381,145	63,003
Jamaica	5,406
Trinidad and Tobago	72	46,241	5,567
Other British West Indies	1,333
Cuba	27	463,393	1,031	1,927,475	557,623
French West Indies	6,226
Haiti	348
Dominican Republic	5	8,340	138,565
Argentina	18	34,800	18,299
Brazil	20	27,949	205,459
Chile	1	1,919	15,217
Colombia	6	19,723	13,220
Ecuador	1,075
British Guiana	731
Peru	36,060
Uruguay	12,508
Venezuela	458
China	176,161
Kwantung, leased territory	19,036
Chosen	6,793
British India	80,788
Dutch East Indies	43	13,579	1,249
Japan	5	6,000	76,559
Turkey in Asia	157
Philippine Islands	16	22,400	..	..	124,304
British South Africa	15,192
French Africa	3,104
Morocco	15,652
Egypt	150
Total	64	520,293	1,452	2,535,887	1,736,334

Exports of Locomotives in January

In the exports of steam locomotives January showed a slight decline over December. The totals are 149, valued at \$4,248,147. Cuba, with 66, was the destination of the greatest number of these engines, while Brazil, with 23, comes next. The detailed figures by countries, as compiled by the Division of Statistics of the Bureau of Foreign and Domestic Commerce, are as follows:

Countries	Number	Dollars
Russia in Europe	2	25,000
Canada	2	16,488
Nicaragua	1	17,000
Mexico	6	51,275
Cuba	66	2,064,030
French West Indies	2	34,660
Dominican Republic	5	86,614
Argentina	2	28,460
Brazil	23	657,841
Colombia	3	102,700
Dutch Guiana	4	28,080
Peru	2	18,525
Venezuela	1	13,425
Chosen	12	692,340
Dutch East Indies	3	42,825
Japan	2	40,300
Australia	1	17,000
Philippine Islands	6	60,650
Egypt	6	250,934
Total	149	4,248,147

Equipment and Supplies

Cars and Locomotives Delivered in January

The number of freight cars delivered in January by the car building companies reporting to the Railway Car Manufacturers' Association totaled 7,008 for domestic service and 819 for export. The passenger cars delivered totaled 43 for domestic service. On January 31 the companies had on order and undelivered orders for 32,874 freight and 786 passenger cars for domestic service and 2,903 freight and 42 passenger cars for export.

The figures for the month are as follows:

NEW CARS DELIVERED			
	Domestic	Foreign	
Freight	7,008	819	
Passenger	43	...	
ON ORDER AND UNDELIVERED			
	Domestic	Foreign	Total
Freight	32,874	2,903	35,777
Passenger	786	42	828
CAR REPAIRS			
Delivered—January			4,229
On order and undelivered January 31			21,469

The members of the association co-operating in this report are as follows:

American Car & Foundry Company, New York.
 Bethlehem Shipbuilding Corporation, Wilmington, Del.
 Bettendorf Company, Bettendorf, Iowa.
 Osgood Bradley Car Company, Worcester, Mass.
 J. G. Brill Company, Philadelphia, Pa.
 Cambria Steel Company, Philadelphia, Pa.
 Cincinnati Car Company, Winton Place, Ohio.
 Greenville Steel Car Co., Greenville, Pa.
 Haskell & Barker Car Company, Chicago.
 Keith Car & Manufacturing Company, Sagamore, Mass.
 Keith Railway Equipment Company, Chicago.
 Laconia Car Company, Laconia, N. H.
 Liberty Car & Equipment Company, Chicago Heights, Ill.
 Magor Car Corporation, New York.
 McGuire-Cummings Manufacturing Company, Chicago.
 Mt. Vernon Car Manufacturing Company, Mt. Vernon, Ill.
 Pacific Car & Foundry Company, Seattle, Wash.
 Pressed Steel Car Company, New York.
 Pullman Company, Chicago.
 Ralston Steel Car Company, Columbus, O.
 Ryan Car Company, Chicago.
 St. Louis Car Company, St. Louis, Mo.
 Standard Steel Car Company, Pittsburgh, Pa.
 Manufacturers not members of the association co-operating in this report are as follows:
 Chicago Steel Car Company, Harvey, Ill.
 Pennsylvania Tank Car Company, Sharon, Pa.

Locomotives

THE LOUISVILLE & NASHVILLE, reported in the *Railway Age* of November 19, as inquiring for locomotives, will build 34 locomotives, including 16 Mikado type locomotives, in its own shops.

Freight Cars

THE ST. LOUIS, TROY & EASTERN is inquiring for from 50 to 100 cars.

THE BALDWIN LOCOMOTIVE WORKS is asking for prices on 100 tank cars for export.

THE LEOPOLDINA RAILWAY (Brazil) is asking for prices through the car builders on 60 flat cars.

THE UNITED FRUIT COMPANY, New York, is inquiring for 50 all steel ballast cars for the Truxillo Railroad, Honduras.

THE HURON PORTLAND CEMENT COMPANY, Detroit, Michigan, is inquiring for 20 steel ore cars of from 40 to 50 tons capacity.

THE ATCHISON, TOPEKA & SANTA FE is inquiring for 300, 50-ton gondola cars, in addition to those noted in the *Railway Age* of February 25 (page 483).

Signaling

THE PENNSYLVANIA has ordered from the Union Switch & Signal Company for proposed alternating current signal installations between Atglen, Pa., and Downingtown, a total of 227 Vane type a. c. relays; 40 d. c. relays; 60 position-light dwarf signals, and 60 "A-1" electro-pneumatic switch and lock movements, complete, with Style "C" cut-off valves. This material is for revisions to three electro-pneumatic interlockings now in service between Atglen and Downingtown.

Railway Construction

ANN ARBOR.—This company will replace its woodworking shop at Owosso, Mich., recently destroyed by fire, with a steel fabricated building.

CENTRAL OF GEORGIA.—The Interstate Commerce Commission has issued a certificate authorizing the construction of a branch line in Jefferson County, Ala., from McCombs, which is 12.6 miles east of Birmingham, in a southwesterly direction for a distance of 5.8 miles with a spur line of 3 miles.

CLEVELAND, CINCINNATI, CHICAGO & ST. LOUIS.—This road is contemplating realignment and grade revision in the vicinity of Terre Haute, Ind.

NORTHERN PACIFIC.—This company will erect temporary structures to replace the machine shop, wood working mill, car repair shop and minor buildings which were destroyed by fire at Tiburon, Cal., as definite decision has not been made as to whether a modern shop will be constructed at that point, or some more advantageous location along the line.

PHILADELPHIA, NEWTON & NEW YORK.—The Interstate Commerce Commission has rendered a decision that the proposed relocation of the main line in the city of Philadelphia, by which the company proposes to abandon a short piece of line and construct a new line about 1,150 feet in length across privately owned property, is not within the scope of Paragraph 18 of Section 1 of the interstate commerce act and that a certificate of public convenience and necessity is not required.

WISCONSIN-NORTH WESTERN.—This company has applied to the Interstate Commerce Commission for authority to abandon its line of 11½ miles in Marinette County, Wis., which was built to serve a logging traffic which, the petition says, is now adequately handled by other lines.



Photo by International

From Left to Right: F. P. Walsh, B. M. Jewell and W. Jett Lauck

Supply Trade News

The **Simmen Automatic Railway Signal Company** has moved its offices from Buffalo, N. Y., to Eden, N. Y.

The **Regan Safety Devices Company, Inc.**, has moved its New York City office from 140 West Forty-second street to 522 Fifth avenue.

The **H. K. Ferguson Company**, southern department, has removed its offices to Room 218, Healey building, Atlanta, Ga. **Richard W. Alger** is the manager.

The **Hegeman-Castle Corporation**, Chicago, has taken over the activities of Holden & White, Incorporated, and moved its offices from the McCormick building to 343 South Dearborn street.

Manning, Maxwell & Moore, Inc., New York, on May 1, will take over the merchandise and goodwill of Patterson, Gottfried & Hunter, 211 Center street, New York. This firm handles mill and factory supplies.

Ralph T. Hatch, for the past 14 years with the National Malleable Castings Company, Cleveland, Ohio, has been appointed general manager of sales for the **Reading Steel Castings Company**, a subsidiary of the American Chain Company, with headquarters at Reading, Pa., effective April 1.

F. E. Whitcomb, special representative of the Federal Signal Company, Albany, N. Y., has left that company to become vice-president and sales manager of the **Consolidated Equipment Company, Ltd.** This firm handles railway, marine and signal supplies, with headquarters at Montreal, Quebec.

The **American Mason Safety Tread Company**, 480 Lexington avenue, New York, on March 1 consolidated its general sales office for New England, New York State and New Jersey with the local New York City office, under the supervision of **J. W. Scott**. **L. H. Devoe** will continue to serve the trade in this territory as in the past, with headquarters at New York.

A. M. Castle & Co., of Washington, dealers in steel and hardware, have recently purchased a large portion of the real estate and buildings owned by the Skinner & Eddy Shipbuilding Corporation at Seattle, Wash. The purchase covers 250 ft. fronting on Railroad avenue and 560 ft. fronting on Connecticut avenue. A building 100 ft. by 500 ft. is located on this property, also a brick office building with two stories and basement 50 ft. by 120 ft. With the present purchase, the company now has three buildings, having approximately 100,000 sq. ft. of area, with an additional seven acres for building expansion.

The **Equitable Equipment Company**, 411 Whitney Central building, New Orleans, La., has just completed its organization for the purpose of handling locomotives, cars, railroad equipment, rails and rail accessories, machinery of all kinds, contractors' equipment and second hand machinery and equipment. This new company is taking over the equipment, rail and machinery business of **A. Marx & Sons**, Southern Scrap Material Company and the Ship Supply Company. The new firm will be under the direct management of **O. D. Cleveland**, who has been the manager of the New Orleans branch of the General Equipment Company.

American Steel Foundries

The gross earnings of the American Steel Foundries for the year 1920 (including the Griffin Wheel Company) reached the largest total in the history of the company—\$59,481,563.58. The annual report, signed by **R. C. Lamont**, president of the company, says: "During the first three-quarters of the year the net earnings ran at the rate of about 10 per cent on the above figures, or approximately \$6,000,000; but,

of course, we could not hope to escape the very serious decline in business which became marked during the latter part of the year; our business began to shrink rapidly in the fourth quarter." In continuing his report, Mr. Lamont stated: "At the first sign of this shrinkage we stopped all purchases and by the end of the year had reduced our supplies and raw materials to the lowest point in many years; such materials as we had on hand, however, were written down to market prices, necessitating a reduction in profits of approximately \$1,500,000. In addition to this we took a loss on Liberty Bonds and Victory Notes of about \$320,000. In spite of this heavy write-off we were able to carry forward to surplus the very satisfactory sum of \$4,496,442.16. We have a total profits and income of \$6,670,994.13. From this must be subtracted \$924,951.97 for interest charges, losses on securities sold, earnings of subsidiary company belonging to outstanding minority stockholdings, also \$1,249,600 reserved for excess profits and income taxes, leaving net profits as above stated—\$4,496,442.60. Cash dividends of 7 per cent on the preferred stock and \$3 a share on the common stock were declared during the year; in addition, stock dividends aggregating \$6 a share on the common stock was paid out of appropriated surplus. The balance in this account is now \$2,869,263.85. The unappropriated surplus is \$11,144,730.71, as compared with \$9,274,166.52 last year." Mr. Lamont states that "the very high figure of \$13,219,235.34 of accounts receivable shown on the balance sheet is largely the result of the decision of the Comptroller of the Treasury that he cannot make payments on accounts to the railroads of the sums due from the federal government. The bill recently passed by Congress," he continues, "authorizing the Treasury to make payments should bring speedy relief and enable us to pay our bank loans."

The consolidated balance sheet follows:

ASSETS	
Real Estate, etc. (less depreciation reserve).....	\$32,946,233.19
Preferred Stock Sinking Fund (in Bank).....	84,813.00
Current Assets.....	27,024,791.77
Deferred Charges to Operations.....	148,955.53
	\$60,204,793.49
LIABILITIES	
Capital Stock.....	\$28,882,300.00
Capital Stocks (par value) of subsidiary company not held by American Steel Foundries and surplus appertaining thereto	4,955,458.61
Four Per Cent Debentures.....	684,800.00
Current Liabilities.....	11,048,930.99
Sundry Operating Reserves.....	619,209.33
Appropriated Surplus (deducting stock dividends).....	2,869,363.85
Unappropriated Surplus.....	11,144,730.71
	\$60,204,793.49



Photo by Ewing Galloway

Looking Westward Along Thirty-third Street Toward the Pennsylvania Station, New York

Railway Financial News

ALABAMA, FLORIDA & GULF.—*Asks authority to issue bonds.*—This company has applied to the Interstate Commerce Commission for authority to issue \$150,000 of 7 per cent, first mortgage sinking fund gold bonds to finance additions and extensions.

BOSTON & MAINE.—*Consolidation of Subsidiaries Bill.*—In a bill passed by the House of Representatives of Vermont on March 10 this road is permitted to consolidate all its subsidiary lines in Vermont into a single corporation. The measure gives the Public Service Commission jurisdiction over consolidations of railroad companies in certain cases, and while the merger provisions apply generally to railroads in the state which parent organizations may decide to take over, it was stated that it resolved down in practicable application to the Boston & Maine. In 1915 a similar bill passed by the Senate was killed in the House. No opposition was offered the measure this year.

CHESAPEAKE & OHIO.—*Asks Authority to Pledge Bonds.*—This company has applied to the Interstate Commerce Commission for authority to pledge \$487,000 of its general mortgage 4½ per cent gold bonds of 1892 from time to time as security for short term notes.

CHICAGO & ILLINOIS WESTERN.—*Asks Authority to Increase Capital Stock.*—This company has applied to the Interstate Commerce Commission for authority to increase its capital stock by the issuance of 6,000 shares of 7 per cent non-cumulative preferred stock.

CHICAGO & NORTH WESTERN.—*Authorized to Issue Bonds.*—This company has been authorized by the Interstate Commerce Commission to issue and hold in its treasury \$1,440,000 of its general mortgage gold bonds of 1987 and \$416,000 of first and refunding mortgage gold bonds.

CHICAGO & NORTH WESTERN.—*Authorized to Issue Bonds.*—The Interstate Commerce Commission has issued an order authorizing the issuance of \$15,000,000 of 15-year, 6½ per cent, secured gold bonds, maturing March 1, 1936, which had been sold to Kuhn, Loeb & Co., subject to the Commission's approval, at 95.40. Authority was also granted for the issuance of \$15,000,000 of general mortgage gold bonds of 1987, at 5 per cent, and for their pledge, together with \$3,000,000 of such bonds heretofore issued, as security for the 6½ per cent bonds.

CHICAGO JUNCTION RAILWAY.—*Annual Report.*—A comparative statement of the annual gross and net earnings of the Union Stock Yard & Transit Company, the Chicago Junction Railway Company and the New Jersey Company for the years ended December 31, 1918, to December 31, 1920, is as follows:

Year	Gross	Taxes, interest and operating expenses	Net
1920.....	\$10,231,200.82	\$9,128,452.45	\$1,102,748.37
1919.....	6,237,411.83	4,744,955.03	1,492,456.20
1918.....	5,644,627.41	4,130,862.27	1,513,765.14

The following is a comparative statement of live stock and car receipts for the two years ended, respectively, December 31, 1919, and December 31, 1920:

	1920	1919
Cattle	3,107,690	3,502,400
Calves	742,405	751,008
Hogs	7,526,120	8,672,476
Sheep	4,005,237	5,243,957
Horses	43,020	45,762
Cars	207,955	303,948

President Frederick H. Prince, in his report, said:

The live stock receipts for 1920 show a decrease in all classes of animals, as well as cars. These decreases were largely due to a general depression which prevailed in the live stock business and to the railway strike, which seriously interfered with shipments during the greater part of the year. The Chicago Junction Railway was operated under government guarantees up to September 1, but for the last four months of the year suffered from heavy increased expenses, the general decrease of business, and particularly from entirely inadequate switching rates, which were not increased until December 20, 1920. These factors all contribute to produce the decrease in combined earnings shown.

During the last year approximately 50 new industries were located in the district and on the Chicago Junction Railway and the Chicago River & Indiana in territory adjacent to the district. This is, by far, the largest number of new concerns locating in the district in any one year since its

inception. Many well known and important concerns are included in this list.

CHICAGO, ROCK ISLAND & PACIFIC.—*Asks Authority to Guarantee Bonds.*—This company has applied to the Interstate Commerce Commission for authority to guarantee \$619,000 of first mortgage bonds issued by the St. Paul & Kansas City Short Line, and \$227,000 first mortgage bonds issued by the Rock Island, Arkansas & Louisiana.

CLEVELAND, CINCINNATI, CHICAGO & ST. LOUIS.—*Asks Authority to Issue Bonds.*—This company has applied to the Interstate Commerce Commission for authority to issue \$1,052,000 of 6 per cent refunding and improvement bonds, dated January 1, 1921, and maturing January 1, 1941, for the purchase or payment and retirement of prior lien bonded debt.

DENVER & RIO GRANDE.—*To Raise \$100,000.*—The stockholders' protective committee has appealed to stockholders for a contribution equal to \$1.25 per share of stock for the \$100,000 necessary to show evidence of desire to purchase the road by March 25. There are approximately \$88,000,000 worth of stock outstanding and letters containing the appeal have been sent to 5,000 stockholders.

HARTWELL RAILWAY.—*Asks Authority to Issue Stock.*—This company has applied to the Interstate Commerce Commission for authority to issue \$20,000 of common stock.

INDIANA HARBOR BELT.—*Equipment Trust Agreement Authorized.*—This company has been authorized by the Interstate Commerce Commission to enter into an equipment trust agreement with the Guaranty Trust Company of New York for the issuance of \$354,000 of equipment trust certificates.

LAKE ERIE, FRANKLIN & CLARION.—*Application for Loan.*—This company has applied to the Interstate Commerce Commission for a loan of \$51,250 from the revolving fund, to be applied on the purchase of one freight locomotive.

LEHIGH VALLEY.—*Bonds Paid.*—The \$500,000 4 per cent collateral trust bonds which matured on February 1 were paid off on that date.

LOUISIANA & ARKANSAS.—*Asks authority to issue equipment notes.*—This company has applied to the Interstate Commerce Commission for authority to issue \$66,000 of equipment trust notes at 6 per cent to purchase 25 coal cars.

LOUISVILLE & NASHVILLE.—*Authorized to Pledge Securities.*—This company has been authorized by the Interstate Commerce Commission to pledge from time to time as security for short-term notes, which may be issued without authorization, certain bonds and stocks nominally issued and now held in its treasury.

MAINE CENTRAL.—*Bonds Paid.*—The \$400,000 Knox & Lincoln Railway 5 per cent mortgage bonds, series "A," which matured February 1, 1921, were paid at the First National Bank, Boston. The company obtained a government loan of \$320,305 to help it in meeting this maturity.

MISSOURI-ILLINOIS.—*Asks Authority to Issue Securities.*—This company has applied to the Interstate Commerce Commission for authority to issue \$1,800,000 of capital stock, and \$300,000 of bonds, for the purpose of taking over the Illinois Southern, which it has acquired in reorganization.

MISSOURI-ILLINOIS.—*Granted certificate of public convenience.*—The Interstate Commerce Commission has issued a certificate authorizing the acquisition and operation by this company of the railroad formerly owned and operated by the Illinois Southern.

MISSOURI-PACIFIC.—*New Directors.*—William C. Potter, Carl A. De Gersdorff, C. C. Hughitt and H. L. Utter have been elected directors to succeed Nicholas A. Brady, A. H. Wiggin, J. H. McClement, resigned, and A. J. Hemphill, deceased. Matthew C. Brush, Bertram Cutler, W. C. Potter and J. G. Drew have been elected members of the executive committee.

MONONGAHELA CONNECTING.—*Bonds Paid.*—The \$685,000 first mortgage 5 per cent bonds, due February 12, 1921, were paid off on that date.

NASHVILLE, CHATTANOOGA & ST. LOUIS.—*Asks Authority to Issue Bonds.*—This company has applied to the Interstate Com-

merce Commission for authority to issue and sell or hypothecate \$1,000,000 of its first consolidated mortgage 5 per cent gold bonds of April 2, 1888.

NEW ORLEANS, TEXAS & MEXICO.—Loan from Revolving Fund Approved.—The Interstate Commerce Commission has approved a loan of \$926,000 to the National Railway Service Corporation for the purpose of enabling the New Orleans, Texas & Mexico to provide itself with equipment at a total estimated cost of \$2,315,000.

NEW YORK, CHICAGO & ST. LOUIS.—Asks Authority to Pledge Bonds.—This company has applied to the Interstate Commerce Commission for authority to pledge \$1,036,000 of its second and improvement mortgage bonds from time to time as collateral security for short term notes.

NEW YORK CONNECTING.—Asks authority to issue notes.—This company has applied to the Interstate Commerce Commission for authority to issue two demand notes, for \$270,000 each, to cover advances made by the New York Central and the Pennsylvania to enable the company to pay the February interest on its 4½ per cent bonds.

NEW YORK, NEW HAVEN & HARTFORD.—Receivership Advocated.—Edgar J. Rich, counsel for the Associated Industries of Massachusetts, testifying before the governor's committee of New England, which is investigating the conditions at Boston, on March 15, made the statement in his testimony that he doubted if anything could save the New Haven from a receivership, and it was not to be deplored.

"Increased labor costs and a decrease in traffic due to higher rates, coupled with the fact that lines are in the hands of transportation men rather than traffic experts," Mr. Rich said, "were responsible for the present transportation crisis in this section. The cost of a receivership for all of the New England roads," he added, would not be more than 3 per cent of the proposed increase in rates.

"It is highly important that the credit of the railroads be restored," he said. "The New Haven ought to be reorganized and this opportunity ought not to be lost. One of the essential reasons for a receivership for the New Haven is the millions sunk and investments impaired in outside properties."

James H. Hustis, president of the Boston & Maine, who testified before the committee on the following day, admitted also that the New Haven was the weakest spot in the New England railroad system. Further details of the hearing will be given in next week's issue of the *Railway Age*.

NORWOOD & ST. LOUIS.—Asks Authority to Issue Bonds.—This company has applied to the Interstate Commerce Commission for authority to issue and sell \$199,000 of first mortgage 5 per cent bonds, dated April 1, 1902, to discharge or refund existing obligations.

PORT WENTWORTH TERMINAL CORPORATION.—Receivership.—Thomas B. Felder and C. E. Gay, Jr., were appointed receivers by Judge Evans in the Federal Court at Savannah, Ga., on March 9. The Savannah & Atlanta Railway, which was placed in the hands of receivers on March 4, owns the entire \$1,500,000 capital stock of the terminal corporation.

RARITAN RIVER.—Authorized to Issue Promissory Notes.—This company has been authorized by the Interstate Commerce Commission to issue \$100,000 of promissory notes, with interest at 6 per cent.

READING.—New Plan from Common Stockholders.—The Prosser common stockholders' committee has filed an amended and supplemental petition with the Federal District Court at Philadelphia, in which it asks the court to adopt an alternative plan in case the court cannot require the Reading Company to reduce the par amount of its stock, as requested in the committee's first application. The alternative plan would confine the subscription for stock of the coal company to the common stockholders and require them to purchase the same for about \$7 per share of Reading common, subject to correction on bringing the Reading Company's balance sheet down to date. The petition states that this alternative modification of the plan would accomplish the requirements of the Supreme Court decree and still preserve the equities between the holders of the several classes of Reading stock in accordance with the contract between them.

The committee asks that the following be substituted for the section of the plan giving the three classes of stock equal subscription rights, in case the court refuses to order a reduction in the par value of the stock:

Such no par value stock will be sold to the holders of the common stock of the Reading Company for an aggregate sum equal to the amount by which the book value of the stock and debt of the Coal Company of which the Reading Company must be divested, after deducting the aforesaid \$10,000,000 in cash or current assets and \$25,000,000 in bonds of the Coal Company, exceeds the existing surplus of the Reading Company, for illustration:

Value of Coal Company's stock and debt as carried on books of Reading Company, December 31, 1919.....	\$77,919,770
Deduct cash or current assets and bonds to be received from Coal Company	35,000,000

Net book value of distribution to be made.....	\$42,919,770
Surplus of Reading Company (to be brought up to date).....	33,201,149

Amount to be paid by common stockholders to restore capital, or about \$7 a share of Reading Company common stock (based on surplus shown in December 31, 1919 statement)..
\$9,718,629

Petition Against Plan.—The Continental Insurance Company and the Fidelity-Phenix Fire Insurance Company of New York have asked the court for a modification of the proposed plan. This action is taken independently of the Prosser common stockholders' committee, although the changes asked are substantially the same. Objection is made to that part of the plan which provides that the preferred stocks shall share in any distribution of the accumulated surplus, and also to the payment of a bonus of \$10 for \$1,000 bond to holders of Reading general mortgage 4s.

The Continental Insurance Company is the owner and holder of 4,200 shares of Reading common and the Fidelity-Phenix likewise owns 4,200 shares. Referring to the general 4s, the petition says:

Your petitioners aver that a segregation of the coal and railway properties of the Reading Company, pursuant to the decree of mandate entered herein, can be effected by permitting the general mortgage to remain undisturbed and by providing for the making of such agreements with trustee under said general mortgage as will render impossible any common control of the coal and railway properties, and that such plan can be effected without requiring the release of any property from the lien of said general mortgage.

SEABOARD AIR LINE.—Abandonment of Line Authorized.—The Interstate Commerce Commission has issued a certificate authorizing the abandonment of a branch line in Nassau County, Fla., a distance of 1.39 miles, which was built to serve a beach resort, now abandoned.

WESTERN MARYLAND.—Loan from Revolving Fund Approved.—The Interstate Commerce Commission has approved a loan to this company of \$1,500,000 to aid the carrier in providing itself with freight locomotives at a total estimated cost of \$3,000,000. The carrier itself is required to finance \$1,500,000 to meet the loan of the government.

WEST JERSEY & SEASHORE.—Defers Dividend.—The directors have decided to defer for the present action on the semi-annual dividend of 2½ per cent upon the stock until business and financial conditions for the year can be definitely ascertained. The West Jersey & Seashore has been paying dividends since 1896, most of the time at 5 per cent. In 1906 the rate was increased to 6 per cent, but in 1908 reduced to 4 per cent. Since 1910 it has been 5 per cent. The total stock issue is \$11,586,250, of which the Pennsylvania Railroad owns \$6,747,900.

Dividends Declared

Beech Creek.—½ of 1 per cent, quarterly, payable April 1 to holders of record March 16.
Cleveland, Cincinnati, Chicago & St. Louis.—Preferred, 1¼ per cent, quarterly, payable April 20 to holders of record April 1.
Green Bay & Western.—5 per cent, payable March 21 to holders of record March 19.
Joliet & Chicago.—1¼ per cent, quarterly, payable April 4 to holders of record March 23.
New York Central.—1¼ per cent, quarterly, payable May 2 to holders of record April 1.
New York, Lackawanna & Western.—1¼ per cent, quarterly, payable April 1 to holders of record March 14.
Pittsburgh, Bessemer & Lake Erie.—Common, 1½ per cent semi-annually, payable April 1 to holders of record March 15.
Southern Railway.—Mobile & Ohio stock transfer certificates, 2 per cent quarterly, payable April 1 to holders of record March 15.
Wisconsin Central.—Preferred, 2 per cent, payable April 1 to holders of record March 21.

Railway Officers

Executive

J. L. Wilkes, whose election as president of the Jacksonville Terminal was announced in the *Railway Age* of March 5 (page 534), was born at Columbia, Maury county, Illinois, on October 3, 1880. He began railroad work in 1896 as a telegraph operator on the Nashville division of the Louisville & Nashville and was later promoted to despatcher. In 1905 he entered the service of the Illinois Central as a despatcher and subsequently served as chief despatcher of the Louisville division of the same road. In 1917 he left railroad service for a brief period during which time he was general manager of the Bell-Union Coal & Mining Company, Union county, Kentucky. He returned to railroad service as assistant superintendent of the Atlanta division of the Nashville, Chattanooga & St. Louis, with headquarters at Atlanta, Ga. On August 1, 1918, he became supervisor of the operating division of the Railroad Administration reporting to the regional director of the Allegheny region. In February of the following year he became superintendent of the Washington Terminal at Washington, D. C. On March 1, 1920, he went to Jacksonville, Fla., as general manager of the Jacksonville Terminal and was holding that position at the time of his election as president. Mr. Wilkes will continue as general manager in addition to his new duties.

Financial, Legal and Accounting

H. T. Newcomb has been appointed general solicitor of the Delaware & Hudson with headquarters at New York, effective February 1.

C. E. Coomes, whose appointment as auditor of the Florida East Coast was announced in the *Railway Age* of March 4 (page 534), was born at St. Marys, Ky., on November 3, 1880.



C. E. Coomes

He attended high school in Davies County, Ky., and was graduated in 1898. In 1901 he entered the service of the Illinois Central as clerk to the road supervisor at Cecilia, Ky. The following year he entered the office of the division superintendent and served in various capacities in that office until August, 1905, when he was appointed chief accountant of the Kentucky division. He resigned that position in 1914 to go with the Valuation Division of the Interstate Commerce Commission as

an accountant. In 1917 he entered the service of the Florida East Coast as a special accountant. The following year he was appointed chief clerk to the comptroller and was holding that position at the time of his recent promotion.

G. C. Gahan has been appointed general auditor of the Canadian Pacific with headquarters at Montreal, succeeding F. E. Shrimpton, deceased.

George W. Lamb, assistant comptroller on the Louisville & Nashville, with headquarters at Louisville, Ky., has been appointed general auditor for the Association of Railway Executives, with headquarters at New York City, effective March 1.

Operating

William H. Page, trainmaster on the Seattle division on the Northern Pacific, returned to his former position as conductor on January 18. **Belger H. Hammer**, trainmaster on the Fargo division, was returned to position as conductor on January 7.

H. W. Purvis, general superintendent of the Seaboard Air Line, with headquarters at Savannah, Ga., has been transferred temporarily to the staff of the general manager with headquarters at Norfolk, Va., effective March 3. **P. G. Walton**, general superintendent at Hamlet, N. C., has had his jurisdiction extended to include the entire system.

Traffic

John A. Dolan has been appointed general agent on the Erie, with headquarters at Cincinnati, Ohio, succeeding **John H. Webster**, who has been transferred.

C. J. Acost, traffic manager of the Macon, Dublin & Savannah, with headquarters at Macon, Ga., has had his jurisdiction extended to include the duties of auditor.

J. D. McCartney, whose appointment as assistant general passenger agent of the Central of Georgia was announced in the *Railway Age* of March 4 (page 534), was born at Lin-



J. D. McCartney

ton, Ohio, on September 18, 1881. He was educated in the public schools of Denver, Colo. In 1899 he entered Northwestern University and continued his education at the University of Georgia, from which institution he was graduated in 1902 with the degree of bachelor of science. Upon leaving college he became editor of the Thomasville (Georgia) Times-Enterprise. In 1908 he went to Rome, Ga., as managing editor of the Tribune-Herald. He remained in that position until his recent appointment

with the Central of Georgia. In his new position, Mr. McCartney will have charge of the new department of public relations which has just been established by the company.

Arthur F. Long has been appointed commercial agent on the Chesapeake & Ohio, with headquarters at Minneapolis, Minnesota, succeeding **F. J. Vanderblue**, who has been promoted.

T. F. Harding, traveling agent on the Chicago & North Western, has been appointed traffic manager of the Utah-Idaho Central, with headquarters at Ogden, Utah, effective March 15, succeeding **J. W. Ellington**, who has been appointed to the position of traffic manager of the Amalgamated Sugar Company.

A. C. Hilton, whose appointment as general eastern passenger agent of the Erie, with headquarters at New York, was announced in the *Railway Age* of March 5 (page 534), was born at Altamont, N. Y., on October 15, 1872. He entered railroad service in 1892 with the Erie. In 1901 he was transferred to the general offices of the company in New York, and was subsequently appointed Pacific Coast agent for the company, with headquarters at San Francisco, Cal. In 1907 he became general agent, passenger department, with headquarters at Cincinnati, O. The following year he went to Buffalo, N. Y., in the same capacity, and continued to hold that position until the time of his recent promotion.

Mechanical

E. E. Chapman has been appointed engineer of tests of the Atchison, Topeka & Santa Fe with headquarters at Topeka, Kans., succeeding H. B. McFarland, resigned. The headquarters of this office were formerly at Chicago.

Engineering, Maintenance of Way and Signaling

W. E. Fitzsimmons has been appointed roadmaster of the Dakota division of the Northern Pacific with headquarters at Carrington, N. D.

G. M. de Lambert has been appointed roadmaster of the Lake Superior division of the Northern Pacific with headquarters at Duluth, Minn.

W. D. Simpson has been appointed division engineer of the Florida division of the Seaboard Air Line, effective March 1, succeeding B. Land, Jr., resigned.

G. W. Abbott, division engineer of the Boston division of the Boston & Albany, has been appointed principal assistant engineer, with headquarters at Boston, Mass., succeeding E. S. Draper, deceased. **W. B. Knight**, division engineer of the Albany division, has succeeded Mr. Abbott as division engineer of the Boston division. **E. K. Mentzer**, supervisor of track of sub-division 1, has been appointed division engineer of the Albany division with headquarters at Springfield, Mass. **F. A. Jones**, office engineer with headquarters at Boston, has succeeded Mr. Mentzer, and **E. G. Hartford**, assistant engineer, has succeeded Mr. Jones.

Special

M. L. Bishoff has been appointed assistant chief surgeon of the Atchison, Topeka & Santa Fe Hospital Association.

General

The New York Central, Lines East of Buffalo, has announced that, effective March 16, the following offices have been abolished:

Operating

General superintendent, New York Terminal, First and Second districts.
Superintendent, Little Falls and Dolgeville division.
Assistant general superintendent, New York Terminal district.
Assistant manager, Marine department.
Assistant superintendent, Electric subdivision, West Shore Railroad.
Assistant superintendent on all divisions.

Mechanical

Superintendent, fuel and locomotive performance.
Assistant superintendent, fuel and locomotive performance.
Fuel instructor.
Supervisor of fuel and locomotive performance, First and Second districts.
Superintendent, rolling stock.
Assistant to superintendent, rolling stock.

Engineering, Maintenance of Way and Signaling

Engineer, maintenance of signals.

The following offices have been abolished on the Lines West of Buffalo:

Operating

General superintendent, Third and Fourth districts.

Mechanical

Superintendent, rolling stock, at Cleveland.
Assistant district master car builders at Collinwood and Englewood.
Assistant superintendent, motive power, at Cleveland.
Master mechanics at Collinwood and Elkhart.

Engineering, Maintenance of Way and Signaling

Assistant signal engineer at Cleveland.
Engineer, maintenance of way.

Purchasing and Stores

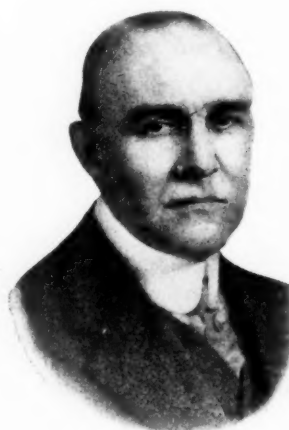
Assistant general storekeeper at Collinwood.

Assistant district storekeeper at Elkhart.

Traveling storekeepers at Englewood.

Obituary

Oscar A. Constans, freight traffic manager of the Baltimore & Ohio, Western lines, died in Chicago on March 8. Mr. Constans was born November 23, 1862. He was educated in



O. A. Constans

the grammar and high schools at Columbus, Ohio, and entered the service of the Baltimore & Ohio in 1883 as a clerk. In 1884 he became secretary to the assistant general freight agent and remained in that capacity until 1887, when he became secretary to the general freight agent at Pittsburgh, Pa. He was later appointed chief clerk in the general freight office at Pittsburgh and held that position until 1895, when he became division freight agent at Pittsburgh. Two years later he was transferred

in a similar capacity to Columbus, O., where he remained until 1907, when he was transferred to Cleveland. In April, 1910, he was appointed western freight traffic manager at Chicago. In 1916 he was appointed freight traffic manager, Western lines, which position he held at the time of his death.

Edmund D. Brigham, assistant freight traffic manager of the Chicago & North Western, died suddenly at the Union League Club, Chicago, on Saturday, March 5, following an attack of heart trouble. Mr. Brigham was 65 years old, and had been in railroad service for 48 years. He entered railroad work in October, 1873, as a telegraph operator on the Chicago & North Western at Ishpeming, Mich., but went with the Chicago, Milwaukee & St. Paul in December of that year as a night telegraph operator at Western Junction, Wis. From May 29, to November 2, 1874, he served as a night telegraph operator in the dispatcher's office on the St. Paul at Racine, Wis., but on the latter



E. D. Brigham

date he returned to the Chicago & North Western, being made cashier, with headquarters at Ishpeming, Mich. In March, 1879, he was made agent at Peshtigo, Wis.; he was transferred to Ishpeming, Mich., in February, 1880, and in January, 1882, he was promoted to traveling freight agent, with headquarters at Fond du Lac, Wis. Mr. Brigham came to Chicago in March, 1885, having been appointed chief clerk in the general freight department. In October, 1888, he was promoted to division freight agent, with jurisdiction over the Wisconsin, Galena, Madison and Peninsular divisions and in January, 1893, he was promoted to assistant general freight agent. He was made general freight agent in February, 1900, and assistant freight traffic manager in 1910.